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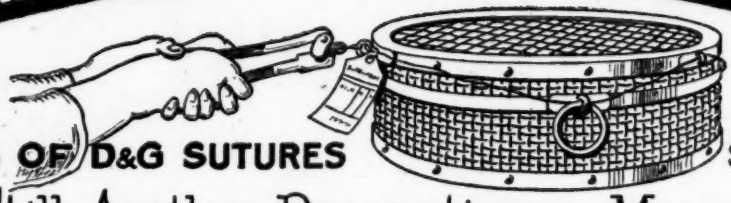

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A Preliminary Report
ON
COCAINE, BUTYN, TUTOCAIN, AND OTHER LOCAL ANAESTHETICS.

BY

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Introduction.

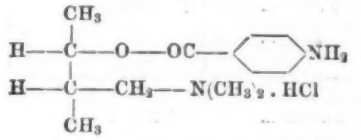
FEW drugs are of greater importance at the present time, both on account of their clinical interest and their habit-forming properties, than the group of local anaesthetics. The object of the present experiments was the investigation of the properties of local anaesthetics already well known, together with the action of such others as have not been thoroughly investigated, with a view to deciding whether any of these drugs could be regarded as satisfying the ideal of what a local anaesthetic should be, while at the same time producing relatively little action on the central nervous system such as might give rise to their abuse as habit-forming drugs.

The laboratory investigation of the action of these drugs, whilst all-important and, indeed, conclusive in some respects, is restricted in others—as, for example, by the difficulty in making reliable observations of subjective phenomena such as those of habit formation, etc. Before proceeding to give my experimental results it is necessary to make clear the properties which the ideal local anaesthetic should possess, and these may be briefly summarized:

1. Powerful local anaesthesia.
2. Low toxicity in proportion to anaesthetic power.
3. No irritating action, or power of causing local damage to tissues. This is another method of saying that it should possess a highly selective affinity for nerve fibrils, and relatively none for other tissues.
4. Sufficient solubility; stability on keeping; not destroyed by boiling.
5. Absorption by mucous membranes; should not be precipitated by saline solution or tissue fluids.
6. Relatively no central stimulating effect on the cerebral cortex, which is the property that induces habit formation.
7. Expense.

It must be remembered that a local anaesthetic suitable for one purpose may not be suitable for another; for special purposes other qualities are required. Thus, for the eye the anaesthetic should not cause lacrymation, smarting, or desiccation of the cornea; for certain operations dilatation of the pupil is also undesirable. For nasal work the drug must cause shrinking of the nasal mucous membrane. It is certain that any local anaesthetic capable of fulfilling all these conditions will not merely supersede cocaine; it will also extend the field of local anaesthesia.

For the purposes of this investigation experiments were made on dogs, cats, rabbits, guinea-pigs, and mice, with cocaine, beta-eucaine lactate, alypin, novocain, stovaine, holocaine, tropacocaine, apothesine, phenolaine, butyn, and also with a new cocaine substitute named "tutocain," to which my attention was directed by Professor H. H. Dale. Tutocain is the newest of the substitutes, having some chemical relationship with alypin. It has the constitutional structure shown[1]—



Tutocain is not decomposed by boiling, and has the advantage over butyn that it can be dissolved in saline. It is prepared by the Bayer Company, who have kindly furnished me with a supply for experiments.

Surface Anaesthesia: Comparative Efficiency.

A good method for investigating "surface anaesthesia" for the rabbit's cornea is described by Sollmann[13 14 15]; I have slightly modified the method. Several tests must be made for each concentration, using different animals, as individual differences in the animals sometimes occur.

The animal is confined in a comfortable stall, the head being free. All eyelashes and long hairs around the eye are clipped. The lower conjunctival sac is kept flooded with the solution for exactly one minute, and subsequent tests for anaesthesia are made by touching and stroking the centre of the cornea with the blunt point of a pencil. Anaesthesia is considered to be complete when no winking reflex is obtained on moderately firm stroking. The time of onset and the duration of this complete anaesthesia are noted, and are considered to be a fair criterion of the depth of anaesthesia. In Sollmann's experiments the animals were released for ten minutes immediately after the application of the drug. This procedure considerably weakens the effect of the anaesthetic, as is shown by the following experiments:

Rabbit.—The right eye received one instillation of 1 per cent. butyn for one minute, and the rabbit was then released for ten minutes. Result: Anaesthesia incomplete ten minutes after butyn.

Immediately after the first experiment an equal quantity of the same solution of butyn was instilled into the left eye of the same rabbit, for one minute; after this the rabbit was kept confined. Very little winking occurred, the cornea thus receiving the full effect of the anaesthetic (as when eyelid retractors are used clinically). Result: Complete anaesthesia, to firm stroking of the cornea, up to twenty-nine minutes, and passing off at thirty minutes.

Table I gives approximately the duration of complete anaesthesia in minutes, the minimum effective concentra-

TABLE I.—*Anaesthetic Efficiency on Rabbit's Cornea.*
(Figures refer to the duration of complete anaesthesia, in minutes.)

DRUG.	1/20 per cent.	1/10 per cent.	1/8 per cent.	1/4 per cent.	1/2 per cent.	1 per cent.	2 per cent.	5 per cent.	8 per cent.	10 per cent.	Minimum Effective Concentration.	Complete Effect of Cocaine = 1.
											Per cent.	
1. Holocaine hydrochloride ...	—	I.A.	6	14	19	31	50	Over 40*	—	—	1/8	2½
2. Butyn	N.A.	I.A.	4	11	16	30	42	Over 40	—	—	1/8	2
3. Cocaine hydrochloride ...	N.A.	I.A.	I.A.	2	13	18	30	Over 40	—	—	1/4	1
4. Tropacocaine hydrochloride	—	—	I.A.	I.A.	8	14	19	25	40	—	1/2	4/5
5. Alypin	—	—	—	I.A.	2	10	22	34	—	—	1/2	7/10
6. Eucaine	—	—	—	N.A.	I.A.	10	16	23	—	—	1	1/2
7. Tutocain	—	N.A.	N.A.	I.A.	I.A.	6	16	21	37	—	1	1/3
8. Stovaine	—	—	—	—	—	I.A.	12	13*	—	—	2	1/4
9. Apothesine	—	—	—	—	—	—	4*	—	—	—	2	—
10. Novocain	—	—	—	—	—	N.A.	I.A.	2	8	11	5	1/20

I.A. = Incomplete anaesthesia. N.A. = No anaesthesia. * Signifies marked irritation. Phenolaine is too irritant for eye work.

TABLE II.—*Anaesthesia of Cornea: Side Actions.*

DRUG.	Vascular Reactions. Rabbit.	Drying of Cornea. Rabbit.	Sensory Irritation.		Pupil Reaction.	
			Rabbit.	Human.	Rabbit.	Human.
Severe Irritants.						
Apothesine (2 per cent.)	Marked dilatation	Moderate drying	Very considerable		No effect	
Holocaine (1 to 5 per cent.) ...	Marked dilatation	Desiccation	Very considerable	Burning irritation	No effect	
Stovaine (2 to 5 per cent.)	Dilatation		Very considerable		No effect	
Phenolaine			Too irritant for cornea			
Irritants.						
Alypin (1/2 to 5 per cent.)	Dilatation	Desiccation			No effect	
Butyn (1 to 5 per cent.)	Dilatation	Desiccation		Smarting at first; lacrymation	No effect	No effect.
Cocaine (1/2 to 5 per cent.) ...	Primary dilatation, then constriction	Moderate drying		Slight smarting 30 secs.	Dilated	Dilated.
Eucaine (1 to 5 per cent.)	Dilatation	No drying			No effect	
Tropacocaine (4 to 8 per cent.) ...	Moderate dilatation	Moderate drying			No effect	
Mild Irritants.						
Tutocain (2 to 5 per cent.)	Moderate dilatation	Moderate drying		Smarting lacrymation, slight	No effect, or slightly dilated	Slightly dilated 2 hours
Novocain (5 to 10 per cent.) ...	Moderate dilatation	No drying		No irritation	No effect	

tions, and the ratio of efficiency. Table II shows the more important side actions. All solutions were made with distilled water for comparison with butyn, which is precipitated by Ringer's solution or saline.

Holocaine, stovaine, apothesine, alypin, and phenolaine are all too irritant for ocular anaesthesia. Tropacocaine, eucaine, and novocain, although less powerful than cocaine, are useful for minor operations. They are mildly irritant and cause moderate vaso-dilatation, which can be controlled by adrenaline.

Tutocain has one-third the anaesthetic power of cocaine and seven times that of novocain, on the rabbit's cornea, but the anaesthesia is slow in onset. On the human cornea a few drops of a 2 per cent. solution of tutocain give complete anaesthesia in about four minutes, which lasts about five minutes to firm pressure with the eye spud; slight smarting and some lacrymation occur, but the irritant effect passes off in one minute. The anaesthetic efficiency of tutocain is less than that of eucaine and tropacocaine, and it shows less irritation and vaso-dilatation; the pupil dilates fifteen minutes after the application and remains slightly dilated for about two hours. Tutocain may be a useful anaesthetic for minor operations.

Butyn is twice as powerful as cocaine, and has no mydriatic effect, for which reasons it is preferred to cocaine by some surgeons. The disadvantages of butyn are the drying effect on the cornea, sometimes followed by desquamation, smarting and slight vaso-dilatation, and its expense. The choice for major operations must therefore lie between cocaine and butyn.

Effect on Nerve Fibres.

A simple method for determining the effect of these drugs on nerve fibres is to paint a definite length of the vagus nerve of an anaesthetized rabbit or other mammal with the various solutions. The vagus was then stimulated with the faradic current at intervals above the part painted; the duration of complete paralysis was determined by the absence of cardiac inhibition.

Table III shows that holocaine, butyn, cocaine, stovaine, phenolaine, alypin, and tutocain all give prolonged anaesthesia when brought into direct contact with nerve fibres. Eucaine, novocain, apothesine, and tropacocaine give a much more evanescent anaesthesia. When the whole nerve is immersed in a solution of the drugs, as in Sollmann's experiments on frogs,[8] novocain and tropacocaine give as good anaesthesia as cocaine; obviously, however, such a method gives no information as to the rapidity with which the drug is absorbed from the seat of action, or whether the drug is destroyed by the tissues.[10]

Blood Vessels.

It is an advantage that local anaesthetics should constrict vessels, and certainly it is a grave disadvantage when they dilate them. I therefore tested the action of the various substances on the blood vessels of the limb and lung, using Dixon's artificial perfusion method[4] with defibrinated blood; the drugs were also injected intravenously into anaesthetized cats and rabbits, and the effect on blood pressure and on splanchnic vessels as determined by the oncometer was investigated.

By the perfusion method it was found that cocaine caused very marked vaso-constriction, and was the only local anaesthetic to induce constriction of vessels by a peripheral action. In these experiments all the other drugs, with the exception of butyn, acted as vaso-dilators, especially

TABLE III.—*Effect of Local Anaesthetics on Nerve Fibres.*
(Solutions painted on 0.5 cm. of nerve for 15 seconds.)

DRUG.	0.1 per cent.		0.5 per cent.		2 per cent.	
	A.	R.	A.	R.	A.	R.
Holocaine hydrochloride ...	15	40				
Butyn	10–17	30–40	40	50	2 hours	
Cocaine hydrochloride ...	12	30	More than 2 hours			
Stovaine	10	23	24	50		
Phenolaine			30	45	35	60
Alypin	10–16	15–20				
Tutocain	10	16				
Beta-eucaine lactate	1	3	12	20	20	30
Novocain	1	5	12	16		
Apothesine	0	0	8	15–20		
Tropacocaine	0	0	5	6		

A. Duration of complete paralysis in minutes.
R. Length of time for recovery in minutes.

stovaine, phenolaine, apothesine, alypin, holocaine, eucaine, and tropacocaine, the effect being less marked for novocain and very slight in the case of tutocain. Butyn, a drug which dilates vessels, especially those of the splanchnic area, behaved in all perfusion experiments like a vaso-constrictor, a result thought to be due to its precipitation by tissue fluids in the smaller vessels.

Equal small doses (5 mg.) injected intravenously into a cat caused: with cocaine, a marked rise in blood pressure with some constriction of splanchnic vessels; with tutocain,

a much smaller rise in blood pressure, with no obvious effect on splanchnic vessels; with butyn, a fall of blood pressure followed by a more gradual recovery, with marked dilatation of the splanchnic vessels.

Nasal Mucous Membrane.

It has been found clinically that cocaine when applied directly to nasal mucous membrane will cause shrinkage, a property which is of much importance to surgeons, and which is not possessed by any well known substitute drug. Nasal mucous membrane is not merely richly vascular, but it has almost the structure of erectile tissue. Direct observation of changes in the condition of the nasal mucous membrane of animals is not feasible, and I therefore devised a special indirect method[19] which was found to be suitable—namely, that of perfusing the nares of a cat or dog through a frontal sinus with warm Ringer solution at a constant temperature and pressure. A small brass tube is screwed into a trephine opening made into the frontal sinus, and by connecting this tube to a Marriotte's flask warm saline can be allowed to run through the nares, and collected and measured as it drips from the nose. When the flow is constant the connecting rubber tube is clipped and the drug is injected through it into the frontal sinus, whence it percolates into both the nasal cavities. After a given time, usually fifteen minutes, perfusion is resumed; any swelling of the mucosa will retard, while shrinkage quickly causes a marked augmentation of, the flow.

Using this method, only two local anaesthetics cause an increase in the rate of flow, cocaine and tutocain—that is, these two only cause shrinkage. Butyn causes marked swelling of the mucous membrane, which can be partly removed by adrenaline, and the swelling is less marked if the adrenaline be instilled into the nose five minutes before the application of the butyn. Other drugs which have been tested by this method are stovaine, novocain, and tropacocaine, and all cause marked congestion. Cocaine has hitherto been unsurpassed in rhinology; tutocain is the only substitute drug which causes shrinkage of the nasal mucosa; if it should prove to be an effective anaesthetic and non-toxic it may become a substitute for cocaine. Butyn is precipitated by sodium chloride, and its action is therefore uncertain. The toxicity of butyn renders the application of 5 per cent. solutions inadvisable, and a 2 per cent. solution only is recommended for the throat and nose.[20]

Irritation.

Le Brocq[11] has shown that stovaine, eucaine, and tropacocaine are too irritant to be used for subcutaneous injection, that cocaine is also irritant to tissues, while novocain is altogether free from irritant properties. I adopted le Brocq's method. Rabbits were used for the experiments: the abdomen was shaved, and the skin washed with ether. The drugs were injected in 10 per cent. solutions freshly made with twice distilled water, 0.5 c.cm. of the solution being injected subcutaneously into the upper part of the shaved area; a control injection of distilled water was made below. Cocaine immediately caused hyperaemia and slight swelling, followed later by ecchymosis and thickening for three days, and then by scab formation. Phenolaine caused hyperaemia, ecchymosis, and slight thickening immediately after injection, lasting four days, and followed by scab formation. Butyn caused slight hyperaemia lasting one day, but no thickening; there was no scab formation, but some desquamation of the skin after five days. Novocain caused no ecchymosis or thickening, nor any signs of irritation, even after the injection of a 20 per cent. solution. Tutocain caused hyperaemia and slight thickening immediately after the injection. The thickening lasted for two days and was followed by scab formation. In the above experiments all the control areas were normal. Cocaine and phenolaine act as irritants to tissues when injected subcutaneously, butyn has very little irritant action, and novocain none. Tutocain is certainly as irritant as cocaine. Experiments were made on three men, subcutaneous injections being made with 2 per cent. solutions. Marked hyperaemia and thickening of the skin is caused immediately after the injection, and some ecchymosis and tenderness persist for about two days. Tutocain would therefore appear to be quite unsuitable for subcutaneous injection; the toxicity of butyn and cocaine[20] renders these drugs also undesirable, and for this purpose novocain most nearly approaches the ideal local anaesthetic.

Specific Action on the Central Nervous System.

One factor common to most local anaesthetics is that they stimulate the central nervous system. Cocaine, butyn, tutocain, and novocain all cause convulsions in rabbits after subcutaneous injection. The convulsions are followed by muscular weakness, or even by collapse if the dose has been large. Small injections not sufficient to cause convulsions give rise to muscular twitchings, especially of the head area, and the general effect is very similar to the cerebral effects produced by tutin[18] and picrotoxin.[3] I have satisfied myself that these convulsions are due in each instance to stimulation of the cerebral cortex. Under the influence of deep anaesthesia the convulsions do not occur. If the animal be anaesthetized, and one cerebral hemisphere destroyed, and if it be then kept lightly anaesthetized with ether, the injection of one of these drugs causes convulsions which occur on the side opposite to the whole hemisphere; further, convulsions cannot be obtained if the crura are divided. There seems, therefore, little doubt that these drugs cause convulsions by stimulating some portion of the cortex of the brain, and that this effect is followed later by depression. When these drugs are injected subcutaneously in the amounts in which they are likely to be used as local anaesthetics, their convulsant action can be placed in the following order—cocaine, butyn, tutocain. Novocain is much less effective, and for practical purposes need not be considered. This property of giving rise to powerful stimulation and excitement of the cerebral cortex is characteristic of one of the two main groups of addiction drugs represented by cocaine, a drug which excites the "emotional and relatively lower centres in the cortex" (Dixon[5]).

Butyn in relatively small doses temporarily depresses nerve ganglion cells throughout the body: the splanchnic nerves are paralysed, though post-ganglionic fibres remain active; the vagus and sympathetic in the neck are depressed; after larger doses both vagi and sympathetic are temporarily paralysed. The cells in the spinal cord are depressed in the anaesthetized cat by even a small dose of butyn, such as 5 mg. injected intravenously, and this dose antagonizes the action of strychnine, since much larger doses of this alkaloid are now required to cause convulsions.

Relatively small doses of butyn injected intravenously may cause sudden arrest of respiration in anaesthetized cats or rabbits; this is in contrast to cocaine and tutocain, which first excite respirations.

Toxicity.

Some observations were made with the object of determining the minimum lethal doses of cocaine, butyn, tutocain, and novocain for rabbits, guinea-pigs, and mice, and the results are given in Table IV. By subcutaneous injection the toxicity of tutocain for rabbits is double that of novocain, and for guinea-pigs and mice two to three times. By rapid intravenous injection of 1 per cent. solutions the toxicity of tutocain is four times that of novocain, and nearly approximates to that of cocaine and butyn. Table V gives the minimal doses required to produce mild convulsions lasting five to ten minutes in rabbits.

TABLE IV.—*Minimum Lethal Doses Compared.*

	Cocaine.	Butyn.	Tutocain.	Novocain.
Rabbit—	mg. per kilo.	mg. per kilo.	mg. per kilo.	mg. per kilo.
Intravenous: 1 per cent. solution (1 c.cm. in 18 secs.) ...	12*	12*	21	90
Subcutaneous: 5 per cent. solution	200*	55*	300	600
Guinea-pig—Subcutaneous: 2 per cent. solution	Under 60	Over 70	120-150	Over 350
Mouse—Subcutaneous: 2 per cent. solution (dose in mg. for 20 gm. mouse)	6	3	10	22

* See Reference [6].

TABLE V.—*Minimum Convulsant Dose for Rabbits.*

	Cocaine.	Butyn.	Tutocain.	Novocain.
Intravenous. Rapid injection of 1 per cent. solution into ear vein (1 c.cm. in 18 secs.)... ...	mg. per kilo. 4	mg. per kilo. 4	mg. per kilo. 10-15	mg. per kilo. 45
Subcutaneous. 5 per cent. solutions under skin of back ...	30	30	65	120

CONCLUSIONS.

1. These experiments show that the best of the local anaesthetics for the eye are cocaine and butyn. Tutocain may also have a use. Tropacocaine, novocain, and eucaine are less valuable for deep anaesthesia.
2. For the nose, cocaine and tutocain are alone useful.
3. For subcutaneous injection novocain is much the best.
4. Besides cocaine, it is believed that the properties of butyn and tutocain may render them addiction drugs.

I desire to express my thanks to the Medical Research Council for the special grant it made for the expenses of this research, and to Professor W. E. Dixon, to whom I am greatly indebted for help and advice throughout the investigation.

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CAESAREAN SECTION.*

BY

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THIS paper records an experience of 116 sections, the majority of which were performed to anticipate or relieve obstructed labour due to pelvic contraction, the others for less common indications.

The Operation.

The abdominal incision is median and subumbilical unless Bandl's ring is present, when it is placed higher. The uterus is opened in the upper segment, and the hand, passed between the placenta and the uterine wall, ruptures the membranes and extracts the child. After removal of the placenta 1 c.cm. of pituitary extract is injected, and the uterus is closed with four to six interrupted catgut sutures, taking up the whole thickness of the wall. A continuous suture or further interrupted sutures adjust the superficial layers and peritoneum, and the abdomen is closed. The operation takes from twelve to twenty minutes. The gaping mouths of sinuses seen while incising the uterus suggested that a safer method of approach must be adopted in septic or suspect cases.

Situation of Placenta.

The placenta in 75 cases was posterior or anterior in position in a proportion of 4 to 3, but in patients who had had previous sections the proportion was 3 to 1, suggesting that the residual scar tissue contributed to this result. It is noteworthy that the placenta was anterior in the only case of rupture of an old scar.

Rupture of Old Scar.

This risk is negligible. In many the uterus showed no trace of a previous incision, but in some there was definite scar tissue, and the wall felt dense when incised. In no case was thinning evident, although in many instances the patient had been in labour a number of hours, and one at least has since been delivered without resort to section. The case which ruptured had had four previous sections and came in for her fifth. After several hours in labour the pain became very severe and she was operated on shortly after admission. The complete ovum was lying in the abdominal cavity, which contained much blood, and the placenta presented. The uterus, firmly contracted, appeared ready for a resuture, which was done. The mother made a perfect recovery.

Contracted Pelvis.

A large number of the patients were definitely undersized and rachitic. Three had old hip trouble with, in two cases, the limb ankylosed in such marked adduction as to render delivery difficult if not impossible, but each in addition had marked flattening on the affected side of the pelvis.

The previous obstetric histories were instructive. A 10-para with a conjugata vera of 3 in. reported the survival of one child—the others died at birth following instrumental delivery—while a 6-para and a 4-para recorded a series of stillbirths preceding the successful Caesarean section. In a number of cases when the child survived delivery it died some weeks or months later from "fits." One 7-para reported that her four children delivered alive with forceps died between six weeks and three months from this cause.

Primiparae, having no antecedent obstetric history, are entirely dependent for their safety on a pre-maternity examination. The outstanding impression gained in dealing with these cases was the extremely obvious indication that something was wrong, gained in practically every instance by abdominal examination without resort to either pelvimetry or an internal examination. The problem, viewed purely as one of elementary mechanics, was obvious: the head was above the brim and actually overriding it; or sitting in the brim and no pressure from above could push it in; or the head was definitely engaged but a large amount was still above the brim. Since in a normal case merely the forehead can be felt above the brim some weeks before term, surely something must be wrong if more of the head is felt. Where there is the least doubt the patient should be anaesthetized, and with fingers—or even the whole hand—in the vagina, the exact relationship of the head (the ball) to the pelvis (the socket) should be decided on a purely mechanical basis. When the patient is in labour and it is believed that the head may come through, a careful watch should be kept on the mother for exhaustion, the child for distress, and the course of labour for the non-descent of the presenting part or the formation of Bandl's ring, with a view to performing an immediate section should occasion arise.

Contraction of the pelvic outlet is less common but more treacherous. In the majority the pelvis was small and the delay was at the brim or high up, but in some cases the abdominal examination suggested that all was well, and the head appeared to be well engaged. In such cases no difficulty was experienced at the operation in extracting the head from the pelvis. A certain number of cases invited the application of forceps, especially when the head was impacted in the mid-cavity in cases of funnel-shaped pelves, and in two cases where it was actually at the outlet. A thorough examination, however, showed that the lower strait could not possibly allow the passage of a head in a condition consistent with the survival of the child, and without inflicting serious trauma on the mother.

Caesarean section as an operation is often regarded as of sole interest to the specialist, and for use in cases of marked pelvic contraction. It has not yet come into its own in minor degrees of this condition.

Obstructed Labour.

Peritoneum.—The peritoneal fluid was markedly increased in a number, and in one was blood-stained.

Uterus.—The presence of Bandl's ring as a shallow transverse groove was noted in a number, and frequently corresponded to the child's neck. In several cases the incision had to be prolonged into the lower uterine segment

* Read before the Edinburgh Obstetrical Society, May 14th, 1924.

to divide the ring before the head could be extracted. The level of the ring varied, and in one or two late cases was almost up to the umbilicus. The lower uterine segment was thin in cases of overdistension—sometimes not thicker than wet blotting paper—and in two cases blood was extravasated under the peritoneal coat, indicating that it was on the point of rupture. The upper uterine segment in several very late cases was in a state of tonic contraction, the surface veins and uterine sinuses being flattened and empty, and merely a little dark blood trickled away on section. The trauma to which the lower uterine segment, cervix, and vagina are subjected is recorded, but the damage which results in obstructed labour from natural forces is not sufficiently recognized.

Intact membranes suggest that the child is fairly safe from undue pressure, but this was disproved by finding meconium in the liquor, and marked moulding of the head before rupture of the membranes. The lower uterine segment and cervix was nipped between the head and pelvic brim in most cases, and in one this was so marked that the stillborn child had an area the size of a two-shilling piece on the post-parietal, showing bare bone. The mother died later from general peritonitis following sloughing of the bruised lower uterine segment, which actually had a hole in it. In another fatal case the child's head was bruised and ecchymosed over an area corresponding to the promontory. One other case presented a laceration of the cervix extending to the vault although forceps had not been used.

Placenta and Membranes.—It was very noticeable that in late cases obviously infected the chorion appeared yellow and pultaceous in the lower areas and could not be stripped off, suggesting that infection was tracking up in this layer outside the amnion. In one this change in the chorion was almost universal and the placental site itself appeared septic.

In late cases the liquor amnii was scanty and usually contained meconium. In a number it was definitely offensive.

Diagnosis of Infection.

Many hours in labour, much interference, or the presence of Bandl's ring is strong presumptive evidence of infection; a discharge developing during labour, after rupture of the membranes, with soreness and redness of the vulva, is almost certain proof, and a temperature is more likely due to sepsis than to exhaustion. Offensive liquor found on opening the uterine cavity, or a positive culture from liquor obtained from the abdomen, is proof positive. Cultures were taken in a few cases, and the results are instructive in showing how soon after rupture the liquor may become infected.

Bacteriology.

Membranes.	Liquor.	Result.		Pyrexia (Days).
		Mother.	Child.	
Unruptured ...	No growth	Alive	Alive	0
,, ...	No growth	,,	,,	1
Ruptured: 6½ hours ...	Diphtheroid bacillus	Alive	Alive	0
8 ,, ...	No growth	,,	,,	5
11 ,, ...	B. coli and streptococci	,,	,,	11
16 ,, ...	Offensive	Dead	,,	—
20 ,, ...	Streptococci	,,	,,	—
25 ,, ...	B. coli and streptococci	Alive	,,	5
26 ,, ...	B. tetanoides	,,	Dead	4
36 ,, ...	Offensive	Dead	,,	—
48 ,, ...	Offensive	,,	,,	—
48 ,, ...	Offensive	Alive	,,	11

Offensive lochia or the discharge of pus from the wound during convalescence is suspicious of antecedent infection. During convalescence each day on which the temperature was above 100° F. was noted, unless it could be attributed to some definite cause—the breasts, for instance. The following average duration of pyrexia was met with:

Membranes Unruptured—
Labour under twelve hours (17 cases) ... ... 2 days
Labour over twelve hours (13 cases)... ... ... 3 ,,
Membranes Ruptured—
Labour under twelve hours (18 cases) ... ... 5 ,,
Labour over twelve hours (5 cases) ... ... 7 ,,

Results.

Forty-three cases operated on early in labour with unruptured or recently ruptured membranes showed 100 per cent. maternal and foetal survival. With the exception of two deaths under anaesthesia the cases which died were all very exhausted and definitely infected.

Maternal Deaths.

Case 1.—A 2-para with a true conjugate of 3 in. had been forty-eight hours in labour and the membranes ruptured for sixteen hours. She was very exhausted, the pulse being 132 and the temperature 97.2° F. Attempts at forceps delivery had been made for two and a half hours on a head above the brim: 1 c.cm. of pituitary extract had been injected, and this necessitated almost continuous anaesthesia for several hours until she was brought to the hospital. On opening the uterus the liquor was found to be offensive and the placental site appeared septic. The child survived, but the patient died on the third day. *Post mortem*, septic endometritis, suppurative peritonitis, and toxaemic changes in the organs were found.

Case 2.—A 1-para with a true conjugate of 2½ in. had been in labour for forty-eight hours and the membranes ruptured for thirty-six hours. She was very exhausted and the pulse was 144. Numerous attempts had been made at delivery with forceps on the head, which was above the brim. Finally the head was perforated. The uterus was in tonic contraction, and, at operation, the lower uterine segment was found to be extravasated with blood. The upper uterine segment was bloodless, and appeared on section like wet leather, and a rapid subtotal hysterectomy was performed. The patient died shortly after the operation was completed. Cultures of the liquor grew streptococci and *B. coli*. *Post mortem* there was no peritonitis, but the vagina was extensively lacerated. Section of the uterine wall showed acute inflammatory oedema and necrosis with streptococci present in the musculature.

Case 3.—A 1-para with a true conjugate of 3½ in. and a funnel-shaped pelvis had been in labour with ruptured membranes for forty-eight hours, and the child was dead. Bandl's ring was present; the head was above the brim and there was an offensive vaginal discharge. At operation the peritoneal cavity contained blood-stained serum and the lower uterine segment was extravasated with blood. The upper uterine segment was in tonic contraction, and the veins were flattened and empty. On opening the uterus the liquor was offensive and the placental site appeared septic. She died on the third day. Cultures of the liquor grew streptococci. *Post mortem*, peritonitis was present and the lower uterine segment was gangrenous and pulpy. The anterior vaginal wall was bruised, lacerated, and surrounded by gangrenous inflammation, and there was a sloughing erosion on the posterior wall of the bladder. An acute haemorrhagic inflammation extended through the left broad ligament up to the lower pole of the kidney. Bronchopneumonia was present in both lungs and the other organs showed toxic changes.

Case 4.—A 4-para with a true conjugate of 3 in. had been in labour for twenty-four hours and the membranes ruptured for twenty hours. She was very exhausted, the pulse was 120 and the temperature 99° F. She had had a discharge for some days and the vulva was sore and excoriated. The chorion appeared sloughy and cultures from the liquor grew streptococci. She died, but the child survived. *Post mortem*, there was no peritonitis, but there was a slight purulent exudate over the uterine incision. Septic endometritis was present, especially about the site of the uterine incision. Both lungs showed commencing bronchopneumonia and pleurisy.

Case 5.—A 1-para suffering from eclampsia with a badly contracted pelvis had been in labour several days. The child was dead, and its scalp had sloughed owing to pressure on the promontory of the sacrum. *Post mortem*, general peritonitis and a hole in the posterior wall of the lower uterine segment were found.

Case 6.—A 2-para with albuminuria had been in labour for three days and the membranes had been ruptured for twenty-one hours. The head was above the brim and markedly moulded. The child survived, but the patient died of septicaemia and (?) peritonitis. Neither cultures nor *post-mortem* examination were obtained.

Case 7.—Death under anaesthesia.

Case 8.—Death under anaesthesia. This patient was very exhausted, and had had several previous anaesthetics and one attempt at forceps delivery.

Case 9.—See placenta praevia.

Case 10.—See occipito-posterior.

Foetal Deaths: Mother Survived.

1. Infected case; eighty-four hours in labour; membranes ruptured forty-eight hours; much moulding.
2. In labour for eleven hours; membranes ruptured six hours; head above brim; vessels in cord thrombosed.
3. Infected case: membranes ruptured twenty-six hours; Bandl's ring; frequent forceps.
4. Labour twenty-four hours; forceps before admission; cord prolapsed.
5. Labour seventeen hours; head above brim; cord prolapsed.

6. Labour twenty hours; head above brim; macerated.
7. Labour twenty-nine hours; membranes ruptured twenty-three hours; child had a spina bifida.
8. Infected case; labour thirty-one hours; membranes ruptured six hours; prolapse of cord.

Foetal Deaths: Mother Died.

1. Child's head perforated before admission.
2. Membranes ruptured thirty-six hours; Bandl's ring; frequent forceps.
3. Obstructed labour and eclampsia; child's scalp necrosed owing to pressure.
4. Central placenta praevia; patient blanched and collapsed.

The deaths of babies could not be attributed to the operation, as, with the sole exception of one or two in the last stages of foetal distress, the others were known to be dead.

The only point for discussion is whether, presuming the death of the child, the mother could have been delivered safely by any other method. Delivery by forceps was out of the question apart from the fact that it had already been tried in a number. Version was also contraindicated, either by the pelvic measurements or by the condition of the uterus, which in some cases was on the point of bursting or tightly gripped the child in a Bandl's ring. Craniotomy is certainly not justifiable if the child is alive, but where the child is dead it might be considered on a head well down in the cavity.

Caesarean Section or Craniotomy.

The case for Caesarean section is as follows: Let it be granted that the twelve babies were known to be dead when the patient was seen. Eight of the mothers left the hospital alive and well; four died—each of the four was profoundly exhausted, and could not have stood an anaesthetic lasting many minutes. Three patients were definitely infected, one of whom had a true conjugate of 2½ in., and one had eclampsia (see maternal deaths 2, 3, 5); the fourth was a case of central placenta praevia—a multipara who was blanched and had chronic nephritis.

Craniotomy on a head above the brim of a contracted pelvis, with an os one-third to half dilated, would in itself tax the skill of an expert obstetrician. Add to this a Bandl's ring gripping the child's neck, the lower uterine segment on the point of bursting, the tissues bruised and highly infected, the mother profoundly exhausted, and the procedure becomes sheer folly. Craniotomy on live children has been recommended in septic cases with a view to avoiding Caesarean section. The criticism of this is the difficulty of proving infection, and its wisdom as a procedure even in the presence of proved infection. The bacteriological table contains nine proved cases of infection; of these, five mothers recovered—the four who died would almost certainly have died in any case; five children have survived who might therefore have been craniotomized had the operation been practicable (see maternal deaths 1, 2, 3, 4).

Hysterectomy in Infected Cases.

A subtotal hysterectomy, presumably to remove the placental site after the risk of infection, is not indicated in suspect cases, and as a procedure in late cases is merely playing with the fringe of the trouble, which by that time is deeply spread in the surrounding tissues. The *post-mortem* reports are amply confirmatory. This applies also to a total hysterectomy.

Technique in Infected Cases.

The patient is put in the lithotomy position, and the vagina is douched out with eusol. The uterus is eventrated and held well forwards, and after being packed round with swabs the edges of the abdominal incision are clipped together over the swabs. Towels are wrapped round the uterus outside the abdomen, and are further protected by a layer of rubber sheeting. The fundus is incised transversely and the child extracted. An assistant holds the anterior and posterior walls apart, and thus prevents separation of the placenta until the muscular funnel lined by the placenta and membranes has been well douched out with eusol, the fluid escaping readily at the vagina. The placenta and membranes are then pressed down into the vagina with swab pressure, and extracted from below. The cavity is flushed again with eusol, and the uterus and abdomen closed as before. The peritoneal cavity is well protected, and the uterine incision avoids the very vascular placental site, which is protected from infection until the membranes have been well flushed. Extraction of the placenta from below prevents the more highly infected membranes in the lower pole from being dragged over the placental site and wound edges. This is only possible if the os is half or more dilated.

This technique has been adopted in five cases, but in one the placenta had to be extracted through the abdominal incision owing to insufficient dilatation of the os. One very late case died (see maternal deaths, 4). All the cases were believed to be infected, although only proved by cultures in two, both of whom survived. Four live children resulted, the fifth being dead at the time of operation. One of the mothers has since had a Caesarean section at the time of election, with no evidence of thinning of the old scar.

Certain Special Conditions.

Placenta Praevia.—Section was performed on four occasions. Three primiparae with placentae over the os were successfully delivered of live children (7½, 7½, 6½ lb.). Two of them had been plugged before operation. One, a 6-para, with chronic nephritis and general oedema, and blanched from loss of blood due to central placenta praevia, died shortly after the operation. The child was stillborn. The placenta in the former cases was definitely elongated, and suggested that it had undergone stretching in the long axis of the uterus during the development of the lower uterine segment. The course of the operation gave rise to no anxiety from bleeding. The operation should always be considered in the child's interests if the patient is near term, especially in primiparae and where the placenta is partially or wholly over the os.

Prolapse of Cord.—If this is associated with pelvic contraction, and there is the least doubt about the safety of version, in the mother's interests, lest her uterus rupture, or the child's interests as its head comes through the brim, the wisest course is to leave the condition alone and make immediate arrangements for a section. In the majority of cases the child is dead, and the sole concern is to arrange for the safe delivery of the mother.

Occipito-posterior Presentation.—Obstructed labour resulted from this on three occasions, the head in each case being above the brim. All were multiparae, and two gave a history of normal deliveries. Bandl's ring was present in both and rendered a version impossible. Live children resulted in each case, but one mother, with a badly bruised lower uterine segment, died of septicaemia and peritonitis. The liquor was offensive, but no culture was taken or *post-mortem* examination performed.

Pendulous Abdomen.—A woman with marked Pott's curvature was delivered through a fundal incision. Her chest rested on her pelvis and compelled the uterus to grow horizontally forwards. In labour the direction of force would have driven the child's head against the spine. Undue importance is attached to pendulous abdomen as a sign of contracted pelvis.

Tumours.—Five cases of obstruction were due to tumours (fibroids in three cases, ovarian tumours in two); some of the patients were seen late in labour after many examinations and attempts at forceps delivery. In two cases the pelvic fibroid simulated the foetal head, and this caused delay in diagnosis. The diagnosis in labour between an impacted ovarian and posterior fibroid is difficult. The three fibroid cases were as follows:

1. Elderly primipara with large multiple fibroids. Caesarean section, followed by a subtotal hysterectomy.
2. Large cervical fibroid. Caesarean section; fibroid to be removed later.
3. Large cervical fibroid; liquor offensive; uterus and abdomen closed. Patient developed a large abscess which burst through the wound, and later required a secondary suture. Six months later the abdomen was opened, and merely a few peritoneal adhesions indicated the previous infection. The fibroid was enucleated; the patient is now seven months pregnant.

In dealing with fibroids where it is hoped to conserve the uterus, the question of accessibility and vascularity will decide whether to attempt removal at the time of section or postpone till involution is complete. In infected cases the latter course is certainly the wiser one to adopt. Both

cases of ovarian tumour required section before the ovarian cyst could be disimpacted and removed. Tapping such a tumour by the vagina does not commend itself owing to doubt as to its exact nature. It was quite out of the question to push the tumour past the presenting part.

Cervical and Vaginal Stenosis.—A patient with cervical stenosis showed signs of obstructed labour, the os was closed, rigid, and difficult to reach. She had been twice curetted. A number of these cases met with have responded to incision of the fibrous ring, but this was not possible here. The vaginal stenosis could not be explained. An elderly multipara with a ring of contraction below the cervix was watched carefully in the later months of pregnancy and early in labour, but as the ring showed no relaxation a Caesarean section was performed.

Eclampsia (two cases).—Both cases had in addition marked pelvic contraction, and obstructed labour. One died later from sloughing of the lower uterine segment; the baby was dead. The other had a fit on the table and was operated on while unconscious; an anaesthetic was given when stitching up. Both she and the baby survived.

THE BACTERIOPHAGE IN THE TREATMENT OF TYPHOID FEVER.

BY

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THE value of the administration of bacteriophage in the treatment of organismal infections in man has not yet been definitely established. *In vitro* the bacteriolytic principle, whether it be due to an ultramicroscopic living virus or some other property associated with organismal life, has a very marked effect on susceptible bacteria.

The extensive work of d'Herelle (1922)[1] has shown that the spread of avian typhoid and paratyphoid can be controlled and actual cases may, in some instances, be cured by the subcutaneous injection of a small dose of bacteriophage active for *B. gallinarum* and *B. pullorum*. In human beings affected with typhoid and dysentery d'Herelle (1922)[2] has demonstrated repeatedly that a very active bacteriophage can be isolated from the faeces when convalescence commences. He has also treated seven cases of dysentery by giving 2 c.cm. of bacteriophage by mouth, and apparently obtained good results. Bruynoghe and Maisin (1921)[3] have treated with success infections due to the staphylococcus and *B. anthracis* by subcutaneous injection of suitable bacteriophage. Beckerich and Hauduroy (1922)[4] have treated seven cases of typhoid fever and two cases infected with *B. paratyphosus* B by giving 1 c.cm. of a culture of active bacteriophage subcutaneously and 2 to 5 c.cm. by mouth. From all these cases the infecting organisms were isolated from the blood forty-eight hours previous to the administration of bacteriophage. In every case defervescence took place within forty-eight hours.

Methods.

The bacteriophage employed in the treatment of cases of typhoid fever was isolated from the faeces of a normal individual who never had an intestinal infection. It was obtained by the technique devised by d'Herelle.

Five grams of faeces were added to 50 c.cm. of broth (*p*H 8.0) and incubated overnight. The broth was centrifuged to remove all coarse material, and the supernatant fluid was afterwards passed through an L_2 Chamberland candle; 2 c.cm. of the filtrate were then added to tubes containing 10 c.cm. of broth. Young agar cultures of strains of the coli-typhoid-dysentery group were now suspended in broth. Sufficient of each suspension was added to the broth tubes to give a turbidity corresponding to that in a standard tube containing 250 million bacilli per cubic centimetre. After a further period of incubation various degrees of turbidity were noted in the tubes. The broth tubes were now subcultured on to agar slopes, and after incubation the presence of plaques definitely indicated the activity of the bacteriophage culture for a particular strain.

A bacteriophage showing some power to cause lysis of *B. typhosus* having been obtained, its virulence was enhanced by filtering the broth culture through a bacterial filter and adding five drops of the filtrate to another broth tube along with a suspension of *B. typhosus*. The second broth culture was then incubated and afterwards filtered. By repeating this process fifteen times a bacteriophage of such virulence was obtained that it produced lysis in a broth culture of *B. typhosus* in from three to four hours.

In investigating the following cases, the faeces of the patient were examined for bacteriophage previous to the administration of the bacteriophage culture, and again twenty-four hours after administration. Thereafter the faeces were examined every second day, so far as was possible, for bacteriophage. The activity of the bacteriophage isolated from the cases was tested against the stock strain, and in the charts the degrees of virulence are thus expressed:

0 = No bacteriophage obtained.
\+ = Bacteriophage of slight virulence as shown by a few plaques on the agar slope.
++ = More numerous plaques.
+++ = Still more numerous plaques of bacteriophage.
++++ = No growth on agar slope or only a few discrete colonies of *B. typhosus*.

CASE I.

A female, aged 58 years, was admitted to hospital eighteen days after falling ill. On admission she had no acute symptoms. The bacteriological examination showed that the blood serum agglutinated *B. typhosus* in a dilution of 1 in 240. No typhoid bacilli were obtained from the blood and urine, but the faeces contained

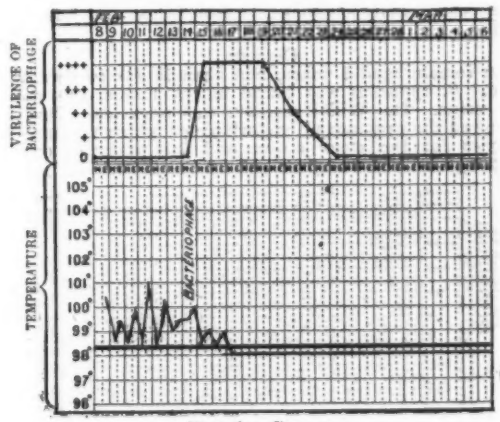

FIG. 1.—Case I.

B. typhosus. No bacteriophage was found in the faeces active for the stock strain or the patient's own strain. Six days after admission the patient was given 0.5 c.cm. of bacteriophage culture subcutaneously and 2 c.cm. by mouth. The temperature then subsided, and twelve further examinations of the faeces and urine were made, with negative results for *B. typhosus*.

CASE II.

A. W., a male aged 38 years, was admitted after being ill for three weeks. *B. typhosus* was not obtained from the blood or urine, but the faeces showed numerous colonies on McConkey plates. The blood serum agglutinated *B. typhosus* in a dilution of 1 in 120. There was no bacteriophage in the faeces active for the stock strain

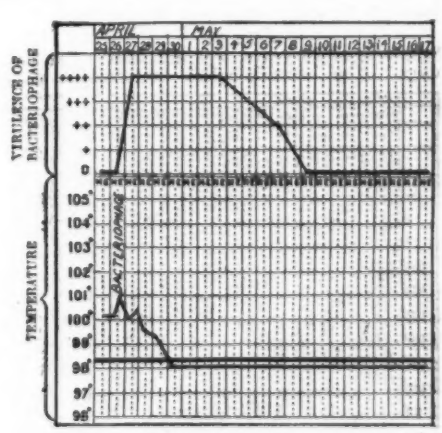

FIG. 2.—Case II.

or the patient's own strain of *B. typhosus*. On the day after admission 2 c.cm. of bacteriophage culture were given subcutaneously and 15 c.cm. by mouth. Thereafter the temperature became normal, and nine further examinations of the faeces and urine did not show *B. typhosus*.

CASE III.

A. D., a female aged 11 years, was admitted in a moderately ill condition after having been confined to bed at home for two weeks. The blood serum agglutinated *B. typhosus* in a dilution of 1 in 120. *B. typhosus* was not found in the blood, urine, or faeces,

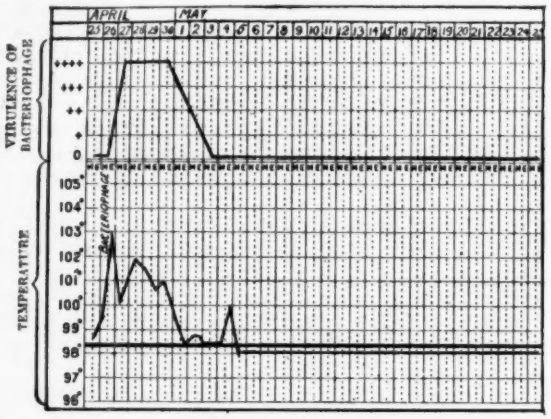

FIG. 3.—Case III.

and the faeces did not contain bacteriophage. Twenty-four hours after admission the patient received 2 c.cm. of bacteriophage culture subcutaneously and 15 c.cm. by mouth. Convalescence was uneventful. The faeces were examined twelve times and the urine ten times, with negative results for *B. typhosus*.

CASE IV.

E. S., a female aged 8 years, had been ill for two weeks before admission. *B. typhosus* was found in the faeces, but not in the blood or urine. The Widal reaction was negative. The patient's faeces showed the presence of bacteriophage which was only slightly bacteriolytic for the stock strain and the patient's own strain. Bacteriophage culture was given subcutaneously and by mouth, and

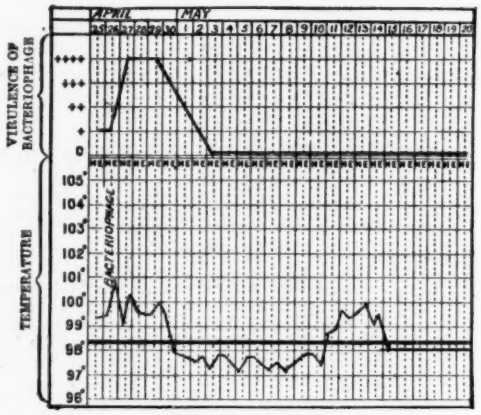

FIG. 4.—Case IV.

the patient became apyrexial. Seven days later, however, there occurred a slight rise above normal in the temperature. A blood culture remained sterile and thereafter the patient made excellent progress. Subsequent to the administration of bacteriophage the faeces were examined eighteen times and the urine nineteen times, but typhoid bacilli were not found.

CASE V.

A. W., a female aged 20 years, was admitted after having been ill for ten days. The bacteriological examination showed that

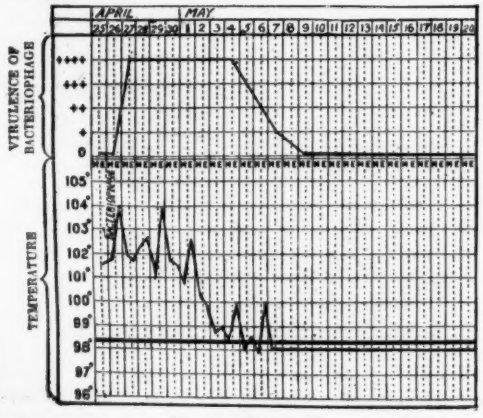

FIG. 5.—Case V.

B. typhosus was present in the blood, the urine, and the faeces. The faeces did not yield a bacteriophage active for *B. typhosus*. The day after admission the patient received 2 c.cm. of bacteriophage culture subcutaneously and 15 c.cm. by mouth. No immediate lysis occurred, but the patient made an uneventful recovery. The faeces were found to contain typhoid bacilli forty-eight hours after the administration of bacteriophage, but fifteen further examinations of the faeces and urine gave negative results for *B. typhosus*.

CASE VI.

J. S., a male aged 20 years, was admitted after being ill for ten days. The Widal reaction was negative and *B. typhosus* was only found in the blood. No bacteriophage active for *B. typhosus*

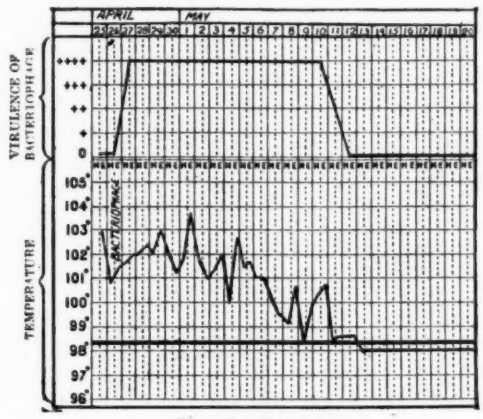

FIG. 6.—Case VI.

was obtained from the faeces. The patient received 2 c.cm. of bacteriophage culture subcutaneously and 15 c.cm. by mouth. Nineteen subsequent examinations of the faeces and urine proved negative for *B. typhosus*.

CASE VII.

G. W., a female aged 36 years, was admitted after having been in bed at home for nine days. The bacteriological examination showed that the patient's blood serum agglutinated *B. typhosus* in a dilution of 1 in 240. The blood culture remained sterile and no organisms were present in the urine at the first examination.

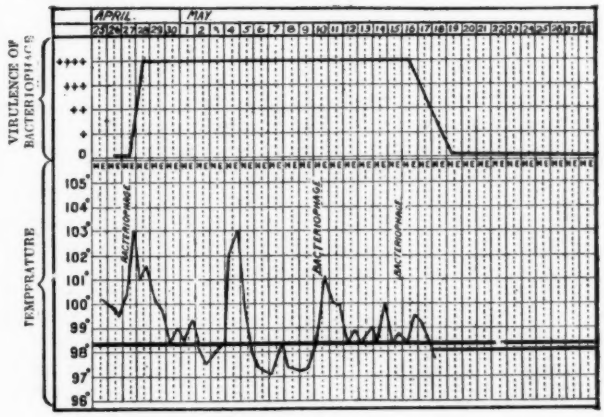

FIG. 7.—Case VII.

B. typhosus was found in the faeces, but no active bacteriophage was present. The bacteriophage was given subcutaneously and per os, and the patient's temperature fell by lysis immediately, but the course of the disease was complicated by an infection of the urinary tract. The urine showed the presence of many pus cells and *B. typhosus*. On two more occasions 4 c.cm. of bacteriophage were given subcutaneously, but this had no apparent effect on the infection of the urinary tract. Eventually the urine became sterile a month after the date of admission.

Discussion of Results.

The results in these seven cases of typhoid fever treated with bacteriophage are of considerable interest. In five there occurred an immediate lysis after the administration of bacteriophage. The type of the disease, the stage of the illness, and the provision of hospital treatment may, however, be sufficient to explain this. It falls to be noted also that these five cases yielded sterile blood cultures. In the two remaining cases, in which the blood culture showed the presence of *B. typhosus*, the bacteriophage had apparently no effect in modifying the course of the disease. The strains of *B. typhosus* obtained from the blood, from the urine, and from the faeces of the various patients were equally susceptible to the bacteriophage *in vitro*.

In the faeces of only one case a bacteriophage of slight virulence for *B. typhosus* was isolated previous to the administration of bacteriophage. Within twenty-four hours of administration, however, an extremely virulent bacteriophage was obtained from all patients. Coincident with the presence of an active bacteriolytic agent in the faeces there occurred a rapid disappearance of *B. typhosus* from the faeces of six out of the seven patients. The course of one case (Case VII) was complicated by an infection of the urinary tract due to *B. typhosus*, and on several occasions when the faeces were obviously contaminated with urine *B. typhosus* was found. A sample of the urine obtained from this case within the first twenty-four hours after the administration of bacteriophage was examined for the presence of bacteriophage, but no active bacteriolytic agent could be demonstrated. The case had repeated subcutaneous injections of bacteriophage, but this did not apparently influence the typhoid bacilli present in the urinary tract. The disappearance of the bacteriophage from the faeces coincides very closely with defervescence except in Case VII, who had repeated doses of the lytic agent. The administration of bacteriophage subcutaneously and by mouth has so far proved to be a perfectly harmless procedure.

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THE PRECIPITATION OF CRISIS IN THE TREATMENT OF PNEUMONIA.*

BY

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MEDICAL OFFICER TO THE ROYAL ALEXANDRA HOSPITAL, RHYL, AND THE DENBIGHSHIRE INFIRMARY.

THE hypothesis is accepted that pneumonia, either secondary to influenza or primary from so-called chill, is a manifestation of a suddenly lowered resistance to a germ or germs, normally present in the respiratory tract, which, in consequence of that lowered resistance, suddenly become pathogenic.

In 1922 I published with Dr. James Graham Willmore[1] a paper founded on observations made in the 17th General Hospital in Alexandria in 1918 and 1919 during the great pandemic of influenza and towards its close. We based our treatment on the fact that the white cell blood count of cases of influenza is low and remains low after the fever has ceased and for about five days after that, after which there is a sudden reactionary increase, usually about the tenth day of the disease and the fifth day of convalescence.

It is during this period of depression and lowered resistance, the result of or the cause of the leucopenia, that the danger of secondary infection exists, and we showed that an injection, either subcutaneously or intramuscularly, of sodium nucleinate in solution precipitates the reactionary increase of white cells in the peripheral circulation and so reinforces the patient's resistance. Sodium nucleinate, given in this way, greatly increases the white blood count whether the patient has a leucopenia or not, and in a normal individual it about doubles the white cell count in twenty-four hours. In cases of marked leucopenia in severe influenzal pneumonia counts have been seen to rise from 3,200 to 18,300 three days after a nuclein injection, with corresponding improvement in the patient's condition from a practically moribund state to one of convalescence in the same period. The toxic symptoms of many of the cases suggested an acidosis, and intensive doses of sodium bicarbonate were given either by mouth, bowel, or intravenous injection, together with glucose in the food or by bowel.

The success which attended our efforts in the pandemic period was so marked that when I returned to general practice I invariably treated all cases of pneumonia on the same lines, with what I believe is an equally satisfactory result—that is, in every case of definite lobar pneumonia so treated a crisis has occurred about forty-eight hours or so after the first dose of sodium nucleinate was given, no matter what day of the disease it was administered.

I have not made a regular practice of making blood counts in all my private patients, but in those cases in which I did I found the white count little more than normal with the patient seriously ill from pneumonia.

The Egyptian cases were 32 in number and cover a period of some six weeks only; they are not selected, but only one of us kept records, so that at least double that number were similarly treated within that period. The English cases consist of 21 consecutive cases over a period of three and a half years. Records of 53 cases in all have therefore been kept, all of which responded to treatment except 8. All the patients were seriously ill, all had pneumonia, all had definite lobar consolidation except 7 cases of bronchopneumonia, nearly all had blood-stained sputum; this often appeared after the so-called crisis, indicating that the severity of the disease was arrested early. Many showed signs of acid toxaemia. All were treated as above described with sodium nucleinate injections. Most of them had as much as half a drachm of sodium bicarbonate every four hours; some had a full drachm. Those who had purulent sputum had an emulsion of creosote and potassium iodide. Cardiac and respiratory stimulants were given if indicated.

Of the 8 fatal cases, 2 were of patients with bronchopneumonia; the other 6 were war-worn soldiers in the pandemic period; 4 had nephritis to a marked degree which was not recent. All were in a very toxic condition on admission to hospital. Two were proved to have white blood counts under 4,000; one was as low as 1,900. Four had no special alkaline treatment, as they occurred before we appreciated its value, and therefore really ought not to be included in this series. One had dysentery and two had malaria.

Three of the patients who suffered from lobar pneumonia relapsed, sustaining a fresh invasion of lung area, but in all the temperature fell again by crisis within forty-eight hours after a further injection of nuclein. All the English cases of lobar pneumonia responded to treatment and recovered.

It will be seen that the cases of bronchopneumonia did not respond so typically as did those of the lobar type. They fell by lysis rather than crisis. It will be seen also that, if we eliminate from the series all the cases of bronchopneumonia and also all the cases which did not receive intensive alkaline treatment, we also eliminate all the fatal cases but two, which were moribund on admission, and had chronic conditions of nephritis before contracting pneumonia.

I do not for one moment claim that all these cases would not have recovered with ordinary expectant treatment, but I think it is at least worthy of note that in all the cases here reported of lobar pneumonia, fully treated, the patient's condition began to improve at once after the nuclein injection, that all of them experienced a sense of well-being the next day, and that in every case the crisis occurred from forty-eight to sixty hours after the first injection of sodium nucleinate.

The preparation used for intramuscular injection is a solution of sodium nucleinate put up by the Clin Laboratories of Paris in ampoules of 2 c.cm., containing 0.05 gram per cubic centimetre. The British agents are F. H. Mertens, 64, Holborn Viaduct, London, E.C.1.

The accompanying diagram shows the length of fever of forty successful cases of lobar pneumonia. The vertical lines represent the duration of the pyrexia, and the horizontal lines the nuclein injection, showing that the effect of the treatment in precipitating devolution is independent of the duration of the illness. In the three charts the heavy black line represents the temperature, while the dotted line represents the white cell count, the normal count of about 7,000 corresponding with the line of normal temperature. The leucocytic increase will be seen to be coincident with

*A paper read before the Liverpool Medical Institution, April 3rd, 1924.

the fall of temperature and the general improvement in the patient's condition.

Two typical cases are also reported in detail.

CASE I.

Sergeant F., aged 29, was admitted from his unit on December 8th, 1918; he had felt unwell for three days. His face was flushed and slightly cyanosed; there was general malaise and coughing, but no expectoration. The abdomen was tumid; he complained of subcostal pain on both sides. Temperature 102°, pulse 100. He was treated with sodium salicylate and stimulants. Two days later his condition showed some improvement; he had less pain; temperature 100°. On December 12th he was not so well: the cough was more marked, and the cyanosis increasing. The next day he was much worse—cyanosed, toxic, and stuporous. On December 14th he looked as if he were going to die. The white count was 3,200; temperature 104°, respirations 60. Sodium nucleinate was injected intramuscularly, and 30 grains of sodium bicarbonate given every four hours. Camphor was given hypodermically, alternating with digitalis 1/100 grain. The day following this treatment he was somewhat more easy; the white count was 7,200. Nuclein repeated. On December 16th he was much better, and was clear mentally; he was expectorating blood-stained muco-pus; temperature 101°. On December 18th the temperature was normal; he was breathing easily and slept well. The white count was 18,300. He appeared to be convalescent. He made an uneventful recovery.

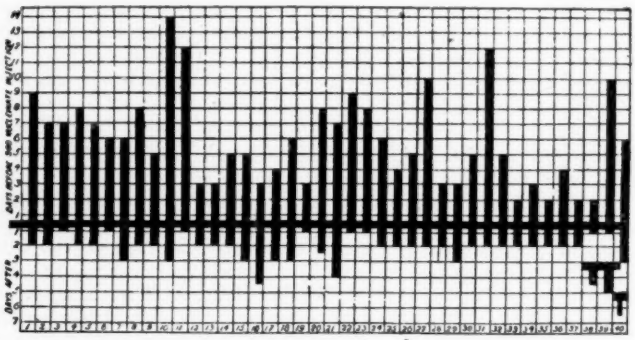

Diagram showing the duration of fever in forty cases of pneumonia treated by sodium nucleinate. Horizontal lines represent time of injection of sodium nucleinate; vertical lines show duration of fever. Cases 38, 39, and 40 show relapses with extension of pneumonic area, treated with a second dose.

CASE II.

Private P., aged 22, on admission from the detention hospital on January 25th, 1919, said he had felt ill for seven days. His face was flushed and cyanosed, lips deeply cyanosed, conjunctivae injected; he complained of headache and general malaise. Temperature 103°; there was no malarial history. He had vomited several times; was not very clear mentally and was delirious. The pulse was rapid and small, there was definite congestion of both bases, and slight friction in the right axilla. Respirations 28, and very distressed; he was tossing from side to side.

On January 26th there were crepitant râles all over both bases; the sputum was purulent and blood-stained. Sodium nucleinate 0.05 grain was injected hypodermically, and every four hours he was given sodium bicarbonate 1 drachm, ammonium carbonate 5 grains, tincture of squill 7 minims; alternately with the above he was given potassium iodide and creosote emulsion. The day following this treatment there was a marked improvement in the patient's condition: the respirations were easier, the pulse less rapid, and he felt comfortable; cyanosis persisted. On January 28th the temperature was normal, pulse 76. The patient said he felt well. Cyanosis still persisted; basal congestion was well marked. The temperature did not rise again, and the patient has remained well.

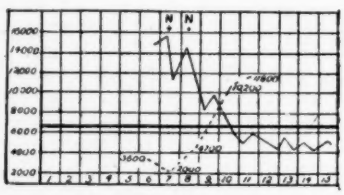

CHART 1.—Case of right basal pneumonia—toxic, cyanosed. White count before injection of sodium nucleinate, 3,600; after sodium nucleinate, 11,800.

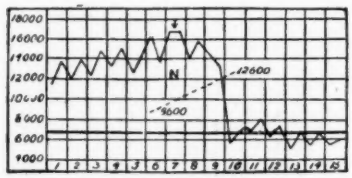

CHART 2.—Case of influenza in a delicate man, aged 37, complicated by pneumonia on the sixth day. Sodium nucleinate on the seventh day; crisis on ninth and tenth days. White count increased by 4,000 in three days.

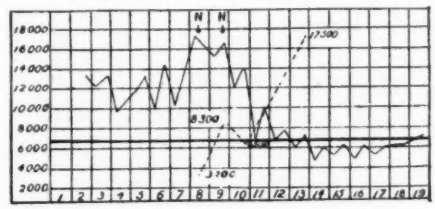

CHART 3.—Man, aged 26, admitted to hospital on the seventh day of illness: cyanosed, toxic, stuporous, vomiting; both bases pneumonic. On the eighth day seemed moribund; white count, 3,200. Sodium nucleinate given: he improved immediately. Crisis on the eleventh day. White count on the thirteenth day, 17,500.

Dr. Alfred Piney of Birmingham, in a critical letter to the editor of the *Lancet* (February 4th, 1922), pointed out that his own researches and also those of Muir and Andrews demonstrated that although a marked leucopenia occurs in influenza, yet the bone marrow of cases succumbing to influenza does not demonstrate any definite depletion or exhaustion of the marrow. He says that one is not dealing with an acute aplasia of the bone marrow, and suggests that our method of treatment does not depend upon a direct stimulation of a leucopoiesis as we originally implied, but upon the establishment of a leucocytosis at the expense of cells already ripe in the bone marrow, which respond to what he calls the "chemiotactic whistle."

How many times have all of us said to anxious relations of a patient suffering from acute pneumonia, cyanosed, dyspnoeic, sweating, poisoned, "I can do no more—it is a fight for life between his natural resistance and his disease; if anything can save him it will be nursing; we must wait for the crisis, but his strength is waning"?

I feel that nuclein converts the watching role of the physician into one of active combat, and for me at least it has robbed lobar pneumonia of some of its terrors. Other conditions exhibiting a leucopenia may respond to similar treatment, and the importance of the role of the phagocyte increases if at will we can increase the strength of the phagocytic phalanx against invading armies of hostile bacteria.

However that may be, I commend to your attention this somewhat unusual method of treatment, and wish to lay emphasis on its importance, because, at the risk of being dubbed an enthusiast or an empiricist, I hold that it is a weapon by which we can with some degree of certainty control a disease which at times assumes the proportions of a plague amongst us, and is at all times one of the principal contributors to the death rate of any nation.

CONCLUSIONS.

1. That pneumonia is the result of lowered resistance.
2. That lowered resistance is coincident with, if not caused by, leucopenia.
3. That leucopenia is the result of a toxin which temporarily paralyses the power of the system to respond to the chemiotactic call of bacterial invasion.
4. That sodium nucleinate, injected intramuscularly, has the power to overcome this disability and to call out the reserves of leucocytes stored in the marrow, converting the leucopenia into a leucocytosis, thereby precipitating the devolution of the disease.
5. That the effect of sodium nucleinate is independent of the duration of the illness, provided the patient is not in a dying condition before it is administered.
6. That the action of this remedy is greatly facilitated by intensive alkalinization of the system by the administration of large doses of sodium bicarbonate.
7. That lobar pneumonia reacts more typically and satisfactorily than does bronchopneumonia.

Finally, my thanks are due to all those gentlemen with whom I saw cases in consultation, to Dr. Alfred Piney for his kindly criticism of our original paper, and to my collaborator in Egypt, Dr. J. Graham Willmore.

REFERENCE.

[1] Influenza: Treatment by Direct Stimulation of Leucopoiesis, *Lancet*, 1922, i, 116.

BLOOD INFECTION OF THE SUBMAXILLARY GLAND.

BY

WALTER MERCER, F.R.C.S.ED.,

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AN acute suppurative inflammation of the salivary glands is in most cases an ascending infection from the duct, predisposed to by a diminished flow of the secretion, by fever, and by a depressed general condition. So is it seen in most post-operative abdominal cases. The condition is usually classed as an ascending infection when there are obvious signs of the duct being the source—as, for example, a bright red protrusion of the duct mucosa or a string of cloudy mucus or pus exuding from the duct. In this type of case the primary symptoms are those of recurring duct infections.

A recent writer states that there is no absolute proof that a blood-borne infection is an occasional cause of acute suppurative inflammation of the salivary glands. The following case seems to be worth recording as most probably a blood-borne infection supervening on a duct obstruction inflammation.

J. S., aged 37, was wounded on September 14th, 1914, by a shell through the right elbow-joint. The joint was shattered, and sinuses discharged for several years without intermission. In March, 1915, the wound healed, the joint having become ankylosed at a right angle; the forearm was also fixed. The wound after this frequently—every few months—was the site of an acute inflammation and abscess formation, but at no time were there any definite sequestra visible on *x*-ray examination or palpable by probe. About 1920 he began to notice that at every acute exacerbation of the gunshot wound his right submaxillary region was the site of a tender swelling which caused pain on moving his jaw, and headaches. He consulted his doctor at this time about it and was advised to have his teeth removed. He had a complete clear-out of both upper and lower jaws, but without any benefit.

On July 26th, 1923, I saw him in consultation. He complained of a tender swelling under the right lower jaw, pain on eating, and headaches, the present attack dating from May, 1923, when he had an acute flare-up in the elbow-joint. The pain is caused by the actual movements of eating, but he states that the sight of food makes no appreciable difference either in the pain or in the size of the swelling. The present swelling came on just before he had an abscess in his elbow incised in May.

There was a rather hard and nodular swelling about the size of a walnut in the right submaxillary triangle; it was freely movable under the skin and on the underlying tissue, but was slightly tender. A string of pus was exuding from the oral exit of the submaxillary duct. It was removed (1½ in. long), and a piece of silkworm gut passed almost the length of the gland, but no obstruction or anything suggesting stone was felt. *X*-ray examination of tibia showed no evidence of stone in the submaxillary gland.

The elbow-joint at this time showed a sinus of about 1 in., but with no palpable dead bone. There was no acute inflammation in this region. The cast (string of pus) from the duct was retained in a sterile test tube and bacteriologically examined. Pus was also taken from the sinus in the arm. The report was as follows: "In each case there was present a Gram-negative bacillus fermenting glucose with the formation of acid but no gas and not liquefying gelatin in two days." The treatment advised was excision of the submaxillary gland.

On September 13th, 1923, under a general anaesthetic the gland was carefully dissected and removed. There was extensive fibrosis around, the natural sequence of the recurring attacks of inflammation, making the operation somewhat more difficult and rather obscuring the landmarks. The wound healed by first intention.

On sectioning the gland it was most interesting to find a small calculus about the size of a pea embedded in a part of the gland which had become much fibrosed.

Inflammation of the salivary glands is usually divided into three classes—the primary inflammation or mumps, the ascending duct infection common in abdominal conditions, and the third that round a calculus. The case recorded is typical of the third class, and would be ordinary but for the interesting history and sequence of symptoms. It would appear that this is a blood-borne infection from the elbow wound, though it would have been interesting to know whether the same organisms could have been recovered from the blood.

In reading some of the literature on inflammation of the salivary glands it is striking to note in the histories of several cases the occurrence in the obstructive type of another infective source in the body. For instance, in one case recorded by Blair and Padget the swelling followed the partial extraction of a tooth, and recurred six months later when the roots which had been left and were septic were removed. Another case followed on tonsillectomy. In both these cases the so-called focal infection was situate in the mouth, so that it was difficult to be sure that it was a blood infection; but in the case recorded there seems little doubt that the bacillus causing the bone trouble had also an elective affinity for the submaxillary gland, and that the infection was by the blood stream.

AMIDOPYRIN IN THE TREATMENT OF MEASLES.

BY

MAX LOEWENTHAL, M.D.WÜRZBURG,

M.R.C.P.LOND.

IN a trial extending over more than a dozen years I have come to the conclusion that amidopyrin,* in the treatment of measles, gives results which show it to have a specific curative action. If given at the first appearance of the rash the results are as follows:

1. Reduction of temperature to normal or nearly normal within twelve hours. This effect is permanent.

2. The development of the rash is sometimes entirely, always partly, inhibited; if it has already affected the face, it will come out in only scanty spots on the trunk and extremities. The spots which appear after its administration, moreover, are pale and evanescent. In one case I succeeded in preventing the appearance of the rash altogether in an undoubted case of measles in a family other members of which were already affected.

3. The most important effect to the sufferer is an immediate euphoria; children who in the evening are prostrated and suffering great distress are cheerful and happy on the following morning. The testimony of adult sufferers is convincing on this point.

4. Cough, coryza, and conjunctivitis all clear up within a day or two.

The average duration of the attack from the first show of the rash in untreated cases or cases treated by other methods is from two or four days; I have never seen any serious or distressing symptoms in those treated by amidopyrin after the first twenty-four hours. It therefore seems to me that this drug acts as promptly in measles as quinine does in malaria, or the salicylates in rheumatic fever. A drug which checks the onward march of the symptoms, and particularly the development of the rash, surely has the right to be called a specific remedy.

The dose for adults is 12 grains three times a day, with or without Dover's powder to alleviate the cough. For children, I have employed the following formula:

$$\frac{(\text{age} + 1) \times \text{dose}}{24}$$

I never have seen any untoward effects from the drug, and so larger doses may be given if they seem indicated.

The following are my last seven consecutive cases treated as above.

Case 1.—D. F., a girl aged 9, felt ill on March 7th, 1924. Cough developed on March 9th. The following day her temperature was 104°. There was a typical roseola on face and neck. I gave amidopyrin 4½ grains, pulv. ipecac. co. 2 grains, thrice daily. On March 11th the temperature was 99.2°; the patient was free from pain and comfortable; rash scanty and pale on trunk and limbs. On March 12th the temperature was normal and the patient absolutely well.

Case 2.—B. C., a girl aged 3. Illness began on March 11th with cough, sneezing, and conjunctivitis. Probable diagnosis, measles. At 2 p.m. the following day the temperature was 100.8°, and there was a characteristic rash over the face and shoulders. She was given amidopyrin 1½ grains, pulv. ipecac. co. 3/4 grain, thrice daily. On March 13th, at 5 p.m., the temperature was 98.6°; the rash had not spread further and had faded. The child was comfortable and was playing when I saw her. Cough and conjunctivitis slight.

Case 3.—H. S., male, aged 22, came home from Blackpool on March 31st with a temperature of 101°. He was seen at 8 p.m. The upper half of the body was covered with thick, deeply coloured roseola; there was a very scanty rash on the extremities. He complained of a distressing feeling of suffocation. Koplik's spots were numerous, and he had severe cough and conjunctivitis. He was given amidopyrin 12 grains thrice daily. On April 1st, at 11 a.m., the temperature was 99.2°. The rash had not spread; he was free from pain and had slept through the night (after several sleepless nights) because "he did not have to keep his attention on his breathing." At 7 p.m. the temperature was 98°. The following day the rash on the face had

* Amidopyrin is recognized in the *British Pharmaceutical Codex* as a derivative of antipyrin. It was originally put on the market under the trade name "pyramidon."

faded; it was pale but had slightly thickened on the trunk and was absent on the extremities. Temperature 97.4°.

Case 4.—H. M., a boy aged 10, was first seen at 7 p.m. on March 17th. He had a temperature of 102.2°, and post-aural roseola. He received no treatment on this day. On March 18th, at 4 p.m., there was a rash on the face and chest—very scanty on the extremities; temperature 101.4°; cough troublesome. He was given amidopyrin 5 grains, pulv. ipecac. co. 2 grains, thrice daily. The following day, at 11 a.m., the temperature was 98°; the rash had not increased on the extremities, and the patient was feeling well.

Case 5.—E. C., a girl aged 5½, was first seen on March 20th. She had been coughing and sneezing for four days. The temperature was 102° in the night of March 19th, when the rash first appeared. It now extended behind the ears, and on the face and forehead; it was scanty on the trunk, and very scanty on the extremities. Koplik's spots were present. Temperature still 102°. She was given amidopyrin 3½ grains, pulv. ipecac. co. 1½ grains, thrice daily. On March 21st, after three powders had been taken, the temperature had fallen to 97°; the rash had faded on face and forehead, and had not spread on the body. There was a slight cough.

Case 6.—E. C., aged 18 months, sister of the previous case. She had been coughing and sneezing since March 20th, and had had a temperature of 101° to 102°. When first seen, on March 25th, at 12 a.m., the temperature was 103° and a few Koplik's spots were present. There was a typical rash behind and below the ears. She was given amidopyrin 1½ grains, pulv. ipecac. co. 1/2 grain, thrice daily. At midday on March 26th there was still some rash on the face, scanty on trunk, very scanty on extremities. Temperature 99.6°. The next day the temperature was 99°, and the rash had faded on the extremities and trunk. On March 28th the temperature was normal and the patient well.

Case 7.—A. C., aged 3, brother of Cases 5 and 6, in the night of March 27th-28th had a temperature of 101°. At 1 p.m. on March 28th it was 100°, and he was sneezing and had a little cough. There was a rash on the face. He felt well and his appetite was good. He was given 2 grains of amidopyrin thrice daily. At 11 a.m. on March 29th the temperature was 96.8°; the rash had not spread, except for two extensive confluent patches in the groins. The next day he had completely recovered.

As I have been unable to find any reference in medical literature to the use of amidopyrin in the treatment of measles I have thought my observations to be of sufficient value to bring to the notice of the medical profession. The early amelioration of all the symptoms promises a reduction in the frequency of dangerous complications, such as bronchopneumonia, and a parallel reduction of the mortality rate.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

RETURN OF PULSATION IN THROMBO-ANGIITIS OBLITERANS.

THROMBO-ANGIITIS OBLITERANS is the name given by Leo Buerger to a disease, limited, as I believe, exclusively to male Hebrews, mostly of the middle period of life, and mostly immigrants from Poland, Russia, Rumania, and Central Europe.* Formerly I termed it "non-syphilitic arteritis obliterans of Hebrews." The disease usually commences in one of the lower extremities and is a cause—perhaps the most frequent cause amongst the male Hebrew population—of "intermittent claudication of extremities." I have had the opportunity of seeing a considerable number of cases in London, and in them when pulsation in an artery had once been lost I had never hitherto been able to verify its return.

M. M., a Russian Jew, was one of my first cases, and was demonstrated by me at the Clinical Section of the Royal Society of Medicine on December 13th, 1907, when he was 42 years old; I described the case, with references to several other cases, in the *Quarterly Journal of Medicine* (1916, ix, p. 289), soon after pulsation had disappeared from the radial artery at the right wrist. The trouble had commenced in his left leg about 1902. Red, tender, subcutaneous swellings, due to multiple foci of superficial phlebitis of the lower extremities, complicated the case from time to time since 1909, and there were periods of very painful ischaemic ulceration, when gangrene in one or other of the feet appeared imminent.

Of late the arterial disease has been apparently non-progressive, and recently when he was again temporarily in hospital under my care for a new trouble, which I regarded as a mild attack of gout at the base of both big toes, I found to my astonishment (May, 1924) that there was again fairly good pulsation in the left radial artery at the wrist. The gout soon subsided with small doses of sodium salicylate and sodium bicarbonate. He has likewise of late developed high blood pressure (the brachial systolic blood pressure is 185 mm. Hg on the right side and 192 mm. Hg on the left side), with a little albumin and a few granular tube-casts in the urine.

Regarding real or supposed return of pulsation in arteries that have become pulseless owing to thrombo-angiitis obliterans, Leo Buerger (*The Circulatory Disturbances of the Extremities*, 1924, p. 269) writes that return of pulsation had been reported in arteries which had been seemingly obstructed. He explains that pulsation cannot return in a really obstructed artery in this disease, but points out that dissections of amputated limbs have shown that the artery may be only more or less collapsed and that with improving circulation through collateral paths pulsation may become re-established, the blood flowing through devious channels in uninvolved territory. This might quite possibly be the correct explanation for the return of pulsation in the case here reported. There can, however, be no doubt that pulsation really has returned, for the patient was under observation in the hospital during about the first two weeks of May, and was again examined a few days ago.

London, W. F. PARKES WEBER, M.D., F.R.C.P.

* Indigenous cases occur in China (G. Duncan Whyte) and Japan (Koga), but I am not aware that any cases have been observed amongst the Chinese or Japanese in England.

A CASE OF ONYCHO-GRYPHOSIS.

THE illustration shows the feet of a woman, aged 69, who was admitted to the Bedford County Hospital suffering from burns. All her toe-nails were found to be very much enlarged, especially those of the great toes. The nail of the left great toe was much thickened and curved so as to form nearly two complete circles and measured on its greater curvature 9 inches. The nails commenced to thicken at the menopause at the age of 49; since then she has been unable to cut them.

The nails of the four smaller toes were shed about once a year, and those of the great toes about every four or five years. They were removed whilst in hospital by soaking in a solution of soda. The nails have been sent to the Royal College of Surgeons Museum, London.

Bedford. W. GIFFORD NASH, F.R.C.S.

STRANGULATED HERNIA IN AN INFANT OF THREE WEEKS.

THE case of strangulated inguinal hernia reported below was admitted to the Wolverhampton and Staffordshire Hospital on May 24th, 1924.

The patient, a boy 3 weeks old, was taken ill on the previous day with pain and vomiting, and the mother noticed that a swelling had appeared in the left groin. During the day the child vomited after each feed. On admission nothing abnormal was found during the examination except the swelling in the left groin; this was a hard, tender, ovoid tumour about the size of a pigeon's egg in the position of the external abdominal ring. The testicle on that side was not felt either in the scrotum or the inguinal canal.

Postural treatment was adopted for a few hours, but in view of the fact that a small blood-stained stool was passed, and that the abdomen became somewhat distended, it was decided to explore the swelling. The operation was performed by Mr. Howard Dent. The tumour proved to be a hernial sac containing much fluid, and a small knuckle of bowel which was constricted by the neck of the sac. The obstruction was relieved and the bowel returned into the peritoneal cavity. The sac, which was of the congenital type, was removed after ligature of the neck. Recovery has been uninterrupted.

Strangulated inguinal hernia at the age of 3 weeks is sufficiently rare to make the case seem worthy of note, and I am indebted to Mr. Howard Dent, honorary surgeon to the hospital, for his permission to make this report.

F. A. H. SIMMONDS, M.R.C.S., L.R.C.P.,
House-Surgeon, Wolverhampton and Staffordshire Hospital.

Reports of Societies.

TREATMENT OF ECLAMPSIA.

AT a meeting of the Section of Obstetrics and Gynaecology of the Royal Society of Medicine on July 3rd, with the President, Dr. CUTHBERT LOCKYER, in the chair, Professor Stroganoff of Leningrad presented a paper on the treatment of eclampsia.

Professor STROGANOFF (whose paper was read by the secretary, Mr. Eardley Holland) began by pointing out that more lives were now lost annually in Great Britain and Ireland from eclampsia than there were sailors killed and wounded at the battle of Trafalgar. He quoted numerous American authors to show that the position was even worse in the United States, while in the big capitals of Europe the mortality from this complication of pregnancy was alarmingly high, although in general lower than in America. He was convinced that a universal application of his method of treatment would reduce this mortality to a half or less. Eclampsia was first treated in this manner in 1897, and in the first 57 cases there were no deaths. Professor Stroganoff went on to describe the results of the introduction of this method into various important clinics, especially in Germany, and everywhere with big reductions in the mortality rates. In 1918 2,208 cases treated by Professor Stroganoff's method were collected from the literature, with a total maternal mortality of 9.8 per cent. By 1924 this total number of cases amounted to 3,202 with 357 deaths, or 10.8 per cent., while in his own hands in the ten years from 1910 to 1921, after some slight modifications, only 6 deaths had occurred (a mortality rate of 2.4 per cent.), and of these 3 cases were from other causes. He was convinced that death could be prevented in all but neglected cases. Apart from the reduction in the mortality rates from eclampsia the beneficial results of this method of treatment could also be seen from the following additional facts. The number of fits was much diminished. Psychical disturbances were only present in 4 cases out of 253, or 1.6 per cent. The child mortality was much reduced, being only 14.3 for the whole group of 253 cases, and if one excluded the cases in which the foetus was already dead before treatment was begun the number of deaths attributable to the drugs used became almost negligible. No deaths due to the treatment occurred amongst the 253 women, and the recovery of the patients was remarkably rapid. From a comparison of this group of 253 cases and 570 treated by less perfect methods, Professor Stroganoff concluded that an absolutely favourable prognosis could be given in a case of eclampsia which had not been neglected. He said he required 47 more cases to complete the 300 necessary for statistical purposes, and he hoped that he might be given facilities for obtaining these cases and demonstrating his method in the next two months during his stay in London. He laid down certain conditions with regard to such demonstrations, amending slightly the classification of eclampsia suggested by Eden, and expressed a desire that a special committee be appointed to consider the results obtained.

Professor Stroganoff's Method.

He then went on to describe his method of treatment of eclampsia, the cardinal principle of which is that the fits must and can be controlled.[1] The first necessity is the removal of all sources of possible irritation: the patient is placed in a darkened room and protected carefully during the fits, oxygen being administered if asphyxia occurs. An injection of morphine (1/6 grain) is given immediately, followed an hour later by 30 grains of chloral hydrate by mouth or per rectum according to the degree of sensibility of the patient. Two hours later another 1/6 grain of morphine is administered, and four hours after this the chloral is repeated (30 grains). Chloral in smaller doses (20 grains) is given thirteen and twenty-one hours after the beginning of the treatment. The doses can be increased if the condition is severe, and vice versa, and if the child is still undelivered at the end of twenty-four hours 15 to 20 grains of chloral should be given three times a day. If the fits recur in spite of this treatment venesection should be performed to the extent of 400 c.cm. The child is delivered, with forceps if necessary, and care is taken to maintain the regular functions of the other organs. Hot bottles are applied to the feet and loins, and fluids in the form of weak tea or diluted milk are given to stimulate the kidneys. The mouth is kept carefully cleansed, the patient is kept on her right side, and oxygen is administered for asphyxia. The heart is supported by digitalis if the pulse reaches a rate of 110 or more, and camphor or caffeine is employed if signs of failure appear. In conclusion he stated that the application of this method would result in recovery for all mild cases, and severe cases had an equally good prognosis if they escaped other disasters such as pneumonia.

The PRESIDENT expressed the thanks of the society, and pointed out that Professor Stroganoff might have some difficulty in obtaining even 47 cases, as eclampsia was happily much rarer nowadays than previously. He emphasized the fact that one of the important principles of this method was that only small doses of morphine were employed, and that the important drug in the preventing of the fits was the chloral.

Mr. EARDLEY HOLLAND inquired as to the indications for venesection in these cases, and asked if blood pressure readings were ever employed. Professor STROGANOFF replied that he had only employed venesection in 10 per cent. of his cases, and then only if three or more fits occurred after the treatment was commenced. If it was thought that the woman would be delivered within two hours venesection was not employed.

Mr. BOURNE paid tribute to Professor Stroganoff's method, which, he remarked, was ultra-conservative in its conception. He stated that results could not be expected unless it was followed out in every detail, and he offered Professor Stroganoff every facility for demonstrating his method at Queen Charlotte's Hospital.

Professor STROGANOFF, in reply, emphasized the necessity for strict application to detail, and stated that it was just these details he wished to demonstrate. He reaffirmed his conclusion that death need occur only in neglected cases.

[1] BRITISH MEDICAL JOURNAL, July 15th, 1922, p. 95.

VISCEROPTOSIS.

AT a meeting of the Medico-Chirurgical Society of Edinburgh held on July 2nd, the President, Sir DAVID WALLACE, being in the chair, Dr. ROBERT HUTCHISON (London) opened a discussion on visceroptosis. He pointed out that this subject lent itself well to discussion because it was a very common condition, its genesis was still ill understood, and it gave rise to many practical problems in relation to diagnosis and treatment. The subject was therefore of interest to a wide field of medical men. The anatomist, the pathologist, the neurologist, the psychoneurologist, as well as the physician, the surgeon, and the gynaecologist, all had to deal with the condition from different angles, giving rise, in many instances, to much diversity of opinion in regard to etiology and treatment. The genesis of visceroptosis was first of all considered, and the well known fact was noted of its greater frequency in women than in men. Dr. Hutchison classified the condition under two heads from the point of view of its origin—namely, (*a*) the so-called congenital or virginal type, and (*b*) the acquired or maternal type.

In regard to the first group he doubted very much if the condition was truly congenital, because he had hardly ever come across the condition in children. He considered the usually expressed reasons for its greater frequency in women, such as influence of poor muscular development due to insufficient exercise, bad posture, straining at stool, shallow pelvis, etc., as not quite adequate. He regarded the condition more as part of the general state of the patient who lacked tone, and showed other evidences than simply a dropping of abdominal viscera. He referred to Stiller's description of the "morbus asthenicus" or

"habitus ptoticus" as giving a fuller picture of the condition. Reference was also made to Keith's theory. In discussing the acquired form he referred to the stretching of the abdominal wall, weakening of the pelvic floor, absorption of abdominal fat, and unhealthy living as being the factors chiefly involved in the production of this form of visceroptosis. The second point for discussion was the question of bands and kinks, and he expressed himself in favour of the view that these structures were of congenital origin and not the result of stresses. The observations on abdominal operations on children should clear up this point, and he was anxious to hear the views of surgeons in regard to this matter. Thirdly, certain points in the symptomatology were discussed and the question was asked, Does visceroptosis, *per se*, produce symptoms? It was common knowledge that from time to time cases were met with showing the acquired form on physical examination by *x* rays, etc., and yet no symptoms were present, but the relief of symptoms during pregnancy in congenital cases favoured the belief that the mechanical results could not be ignored. The maternal type might, however, exist for many years without giving rise to symptoms. Dr. Hutchison thought that in the majority of cases the dropping of the organ was only one factor in the production of symptoms, and pointed out that in addition there was functional incapacity in some organ, or organs, such as atony of the stomach or a deficiency of gastric juice, and the presence of bands or kinks. He referred to Walton's view that possibly symptoms are only produced by bands or kinks. He then raised the question as to whether division of these bands relieved the symptoms—they certainly did not in all cases. Fourthly, the vast importance of the relationship of visceroptosis to neurasthenia and the neuroses was discussed. The question was put, Does visceroptosis cause neurasthenia, or are both manifestations of the morbus asthenicus? There was no doubt that emotion lowered visceral tone, and this state of affairs might quite well react conversely on the nervous system by a lowered visceral tone producing a lowered nerve tone. From the point of view of the general physician it was impossible to neglect the interaction which was bound to take place. We were too apt to forget the mental side and the relationship between this abdominal condition and psychoneurosis. Many patients fostered aches and pains of an abdominal nature as a convenient arrangement for getting sympathy in an endeavour to get out of a difficult situation. Their abdominal complaints were often a cloak for some concealed mental conflict—an anxiety neurosis. The speaker referred to a particular case of this kind whom he had sent to Dr. T. A. Ross, with the result that recovery took place in about eight weeks under Dr. Ross's treatment. Discussing diagnosis, Dr. Hutchison pointed out that to establish the presence of visceroptosis was easy, but the problem at the bedside was—Is visceroptosis the cause of the pain and other symptoms? Visceroptosis was a great mimic, but it was possible for a visceroptotic abdomen to be also the seat of organic disease, so that all the known means of physical examination must be fully used, including a consideration of the mental aspect of the case, and then, if there was still real doubt, surgical exploration might be carried out once and for all, and the patient fully informed of the result, it being previously explained to the patient the reason of this exploration. Dr. Hutchison considered that visceroptosis in itself did not induce organic disease in the abdomen, such as duodenal and gastric ulcers, except possibly gall stones. Finally, treatment was touched upon, and the speaker insisted that the word "cure" should be reserved for those patients who had been free of symptoms for five years or more after operation or other form of treatment. He said there was general agreement as to the ordinary medical lines of treatment. Early detection was of vast importance. The fattening cure was of much value, and it was well known how deposition of fat caused symptoms to clear up. The usual physical treatments and abdominal supports had their definite use in dealing with such cases. The speaker again laid stress on the necessity to treat the mental factor, which often was quite the most difficult detail in the case. Surgical treatment was cited, such as explorations, divisions of bands, etc., and the questions were asked, Are fixation operations worth while? and What happens to patients after fixation operations—do they remain cured, or is the result only temporary?

Mr. JOHN FRASER said that from his surgical experience with children he had no doubt whatever as to the congenital origin of the condition. He pointed out that he had only seen acute intussusception in visceroptosis cases. He referred to certain embryological points in the development of the intestine with reference to this condition. He also said that the sympathetic nerve plexus was probably imperfectly developed in these visceroptotic cases.

Professor WM. RUSSELL said he had long felt there was a congenital type of visceroptosis, and referred to a case of a girl 12 years of age, who suffered from an enormously distended stomach, giving rise to gastric symptoms. These symptoms were easily corrected, but the stomach remained enlarged and an opaque meal was retained in the stomach five hours, and it was found she had a congenital narrowing of the pylorus. He agreed with the view that child-bearing induced the condition, and mentioned an athletic woman who developed the condition after two or three pregnancies. He referred to the importance of testing the functional activity of the stomach by test meals, and treating the stomach on the basis of these findings, when there was evidence of dropping of the viscus. He considered that dividing bands and "tacking up" operations had been tried and found wanting in Edinburgh.

Sir HAROLD STILES agreed with Mr. Fraser as to the congenital view of the origin of the condition. He also referred to the fact that many such conditions are hereditary. Much could be done by proper physical methods at an early age, and six months spent in this way were far more valuable than a similar time of mental work. He regarded the visceroptotic patient as the last type he wished to operate on, and would only do so at the request of the physician when he was absolutely at his wits' end. He referred to ptosis of the caecum, and described in detail the condition known as a "blue caecum"; he considered resection advisable, as fixation was of no use in this localized condition. He also referred to the lack of nerve balance between the vagus and sympathetic in many general visceroptotic cases.

Dr. HAIG FERGUSON agreed with Dr. Hutchison as to the disappearance of symptoms during pregnancy. He was against early rising after parturition, but did not agree with absolute rest in bed. He encouraged his patients to move about in bed and increase the tone of their muscles by mild exercises in bed. He considered surgical interference was always necessary in all gynaecological prolapses, because ligaments had been stretched and ptosis of pelvic organs caused much distress, and this ptosis gave rise to marked constipation. He also noted that many women who had borne children had ptosis of the kidney and were very thin, but when fattening had been carried out the kidney returned to its place and symptoms disappeared.

Professor EDWIN BRAMWELL was quite certain that visceroptosis was often present without symptoms. In the production of symptoms he laid stress on the psychoneurological aspect of the condition, and he strongly deprecated the attitude of those who looked specially for the anatomical evidence and talked about it freely to their patients, who were not in a position to understand the significance of the facts observed. As soon as patients became introspective about their abdominal symptoms they were well on the way to becoming chronic invalids.

Mr. WILKIE pointed out that the motile proximal caecum should be looked at from two points of view—namely, (1) a local condition, which could be dealt with surgically by removal, or (2) as part of a general visceroptosis in which fixation, etc., was not going to do much good. With reference to exploration of the abdomen he would hesitate long before undertaking this, and only at the urgent request of the physician when other means had quite failed. He also agreed with the views already expressed that the nervous factor was a vitally important one and little under the surgeon's control.

Mr. COCHRANE described his experiences in Boston at the reconstruction clinic, where over 3,000 cases of visceroptosis-like conditions had been studied from the anatomical

point of view and correction was attempted along certain well defined lines. Dr. FREDERICK PORTER also took part in the discussion.

Dr. ROBERT HUTCHISON, in his reply, adhered to the view that visceroptosis was uncommon in children. He considered there was some unknown factor in this type of patient which had still to be cleared up. It might be a question between vagal and sympathetic balance. He agreed very much with Professor Bramwell's views about the mental side of the condition.

Two patients were shown by Sir HAROLD STILES after operation for acoustic tumours. The clinical picture on which the diagnosis was based was described and the technique of the operation explained. The cases had been under the charge of Professor Edwin Bramwell before they were handed over for operation. Specimens of brains showing similar tumours were demonstrated.

Sir Harold Stiles also showed a case after operation for spinal root tumour. For some time the case had been regarded as one of an atypical progressive muscular atrophy, and had received strychnine injections; later the patient came under the charge of Professor Bramwell, who diagnosed the tumour. Before operation the patient was almost completely paralysed and passed urine and faeces involuntarily. A vascular tumour was removed and the man walked into the room with the aid of two sticks quite unsupported by anyone. Still further improvements might be anticipated.

Mr. J. W. STRUTHERS showed a young girl, aged 14, suffering from diaphysial aclasis (multiple exostosis). Many *x*-ray lantern slides of her bones were put on the screen and the essential bony lesions demonstrated. He then showed specimens from a case of a patient who suffered from a fractured femur and paraplegia due to secondary growths consequent on a small malignant "latent" kidney tumour. He also demonstrated two patients after the removal of malignant tumours of the kidney. One of these patients had been at work for two years following the operation. He laid stress on the fact that both patients had developed short attacks of haematuria many months before more urgent symptoms had developed, and this first, more or less transient, haematuria was not fully investigated.

STILLBIRTH AND NEO-NATAL DEATH.

AT a meeting of the Edinburgh Obstetrical Society held on June 11th, with the President, Professor B. P. WATSON, in the chair, Dr. F. J. BROWNE read a paper entitled "Further observations on stillbirth and neo-natal death: their causes, pathology, and prevention."

The paper comprised a summary of a second report to the Medical Research Council and was based on the results of an examination of 200 consecutive cases of stillbirth and neo-natal death occurring in the Edinburgh Royal Maternity Hospital, 127 being cases of stillbirth and 73 of neo-natal death. Of ante-natal death—namely, death of the foetus before onset of labour—there were 60 cases, and the most frequent cause of this was found to be syphilis, which accounted for 15 cases, or 25 per cent. All these were spirochaete positive, and in 9 others the cause of death was probably syphilis, as shown by the so-called secondary signs of this disease. The next most frequent cause of death was placental infarction (10 cases), in most associated with albuminuria. Other less frequent causes of death were knots on the umbilical cord, maternal glycosuria, and eclamptic convulsions. Dr. Browne discussed the method of diagnosis of the cause of death in a macerated foetus and the value of enlargement of the liver, spleen, and placenta in the diagnosis of syphilis. From his own statistics he concluded that the liver of a non-syphilitic macerated foetus might weigh as much as one-seventeenth of the body weight. Anything over this was probably syphilitic, but this did not help much, because only three out of nineteen spirochaete-positive foetuses had a liver with a weight ratio over 17. A spleen with a weight ratio above 150 was probably syphilitic, and a placenta showing a weight ratio heavier than 4, provided the foetus had reached at least the eighth month of development and there was no marked degree of red or white infarction, was also strong evidence of syphilis. Below the eighth month this rule did not apply, because as one descended in the scale of foetal development the normal placental weight ratio increased rapidly until at the third or fourth month the placental weight might equal or even exceed that of the foetus. The speaker had never found gross "infarction" in the syphilitic placenta, and looked upon this as strong evidence that endarteritis obliterans of the foetal vessels, which was characteristic of the syphilitic placenta, was not an important factor in the causation of infarction.

Of intra-natal death there were 67 cases, and by far the most frequent cause of this was asphyxia, which accounted for 36 cases, or more than half the total number. The chief predisposing causes were primiparity, leading to prolongation of the second stage, and breech delivery, the latter being found to be ten times as likely to give rise to asphyxia as delivery by the vertex. Dealing with the "hydrostatic test of live birth," it was pointed out that the test might prove fallacious, it being not infrequently found that in cases of asphyxia in which the foetus was born dead the lungs might be sufficiently expanded to float buoyantly in water with the heart and thymus gland attached. This was due to the fact that accumulation of carbon dioxide in the foetal blood so stimulated the respiratory centre that the foetus gasped, drawing air into its lungs if such were available, and partially expanding them. The amount of expansion thus brought about was limited only by the quantity of air available and by the compression of the foetal thorax by the maternal parts. The speaker pointed out the fallacy of the assertion that "full expansion" of the lungs invariably indicated live birth, as one never found the lungs fully expanded even in a child that had lived for twenty-four hours and breathed and cried normally. Numerous areas of atelectasis could always be detected on microscopical examination. If then the lungs were never more than, say, 95 per cent. expanded in a child that had lived for twenty-four hours, and they might be 50 or 60 per cent. expanded in a foetus that had been born dead, where was one to draw the line and say, On this side of the line the child must have been born alive, and on that it must have been born dead? Obviously no such line could be drawn, and expansion of the lungs, however complete, could be no longer looked upon as proof of live birth. Cerebral haemorrhage accounted for 32 cases of intra-natal and neo-natal deaths, 14 being stillborn. In 11 of the cases the haemorrhage was solely intraventricular. In the entire series of 200 cases there were 36 cases of tearing of the intracranial dural septa, or 18 per cent., and in 16 of these the tearing was associated with cerebral haemorrhage, the tears being complete in 11, and incomplete in 5. Further, it was found that 56 per cent. of the cases of cerebral haemorrhage were unaccompanied by tentorial tearing of any degree, that the same percentage of cases of tentorial tearing were unaccompanied by any degree of cerebral haemorrhage, and that the latter was three times as frequent apart from tentorial tearing as with it. The chief predisposing causes of both tentorial tearing and cerebral haemorrhage was breech delivery, disproportion between the head and the pelvis, and difficult forceps delivery. Lastly, Dr. Browne discussed the modern views upon the management of the after-coming head and emphasized the importance of prophylactic external version in all cases of breech presentation. This should be performed at the beginning of the ninth month of pregnancy, as, if carried out sooner, although version was easy, the foetus frequently resumed its former position; if attempted later the operation was difficult or might even be impossible on account of the large size of the foetus and the relatively small amount of liquor amnii.

The paper was illustrated by lantern views and was discussed by the PRESIDENT, Drs. FORDYCE, HAIG FERGUSON, YOUNG, and THOMSON.

A Tumour of the Labium Majus.

Dr. HAIG FERGUSON read a communication on a pendulous tumour of the labium majus exhibiting unusual features.

The patient, an unmarried woman aged 40, was admitted to the Royal Infirmary in 1918 with a large interstitial

fibroid tumour of the uterus about the size of a seven months' pregnancy and producing marked pressure symptoms. The tumour was removed by supravaginal hysterectomy, both ovaries being conserved; the patient made an uneventful recovery. In 1921 she had a severe fall on her coccyx and shortly thereafter noticed a swelling in the left labium majus. This swelling gradually increased in size and caused considerable discomfort. As the tumour presented certain unusual features the patient was placed in the care of a general surgeon, who attempted to remove the mass through a perineal incision, but found this impossible and concluded that the condition might be a variety of pudendal hernia possibly following the previous hysterectomy. The abdomen was therefore opened, but no protrusion of bowel, omentum, or peritoneum through the pelvic floor could be found, nor by vaginal and rectal examination with one hand in the abdomen could any connexion be established between the labial swelling and any of the abdominal contents. The patient made a rapid recovery and in a fortnight's time was transferred to Dr. Ferguson's ward in the Royal Infirmary. At operation a free incision was made over the tumour, which, after being separated from its skin covering, was found to be densely adherent to the surrounding parts, especially posteriorly. In its lower part the growth was in close relationship to the anterior wall of the rectum, and it extended upwards and forwards until the upper limit lay well behind the symphysis pubis. During the process of dissecting it out it gave the impression that one was pulling out, hand over hand so to speak, a piece of intestine, both from its appearance and from its consistence. After removal the mass was found to consist of solid oedematous tissue, measuring 2 ft. 2 in. in length; at its lower part it measured 3 in. in diameter, tapering off till it was about the thickness of a finger where it lay behind the pubes. There was no evidence of any lumen. The upper part was ligatured somewhere in the region of the bladder and severed as far up as possible. A smaller portion of tumour substance was found lying near the rectal wall, apparently separate from the main mass, and this was also removed. The cavity left after removal of the tumour was obliterated as far as possible with catgut sutures, and the wound closed without drainage. The patient made an uninterrupted recovery.

Laboratory investigation showed the fundamental structure underlying the different portions of the tumour to be a fibromyoma, with marked oedema and hyaline degeneration; sections from different parts all showed this fibromyomatous structure, but in some areas the unstriped muscle had undergone almost complete atrophy. The pressure to which the growth had been subjected possibly accounted for the elongated form which it had assumed, growth having taken place along the line of least resistance. In addition to the underlying basic structure secondary angiomatous formations—both capillary and angiomatous—had occurred. No evidence of gland elements was found in the portions sectioned. Dr. Ferguson had been able to trace only two cases at all resembling the one he described: (1) a myxoma of the vulva described by Simpson (*Journ. of Obstet. and Gynaec. Brit. Emp.*, viii, p. 393; (2) a teratoma of the labium majus reported by Duclaux and Herrenschmidt (*Bull. de la Soc. d'Anat. de Paris*, 1905, lxxx, p. 406).

The communication was illustrated by lantern slides and was discussed by the PRESIDENT, Professor DONALD, Drs. FORDYCE and YOUNG.

The following specimens were exhibited:

Dr. WILLIAM FORDYCE: (1) Unusual fibroid tumour showing red degeneration; (2) puerperal uterus showing large fibroid tumour; (3) unusual pelvic tumour simulating ovarian cyst; (4) tubal pregnancy.

Dr. HAIG FERGUSON: Uterus showing squamoid metaplasia of gland epithelium with early malignancy, and, in the same patient, ovary showing early sarcoma (with lantern demonstration).

The PRESIDENT: (1) Ovary with chocolate cysts; (2) large ovarian tumour removed from a patient six months pregnant; (3) uterus removed by vaginal hysterectomy from a case of complete prolapse, showing great elongation of supravaginal cervix.

THE Swiss Society of Medicine and Biology will hold its annual meeting at Lucerne on October 1st, when papers on insulin will be read by Fleisch of Zürich, von Meyenburg of Lausanne, and Gigon of Basle.

Reviews.

PERINEAL PRURITUS.

DERMATOLOGISTS and proctologists have long been compelled to acknowledge that in dealing with pruritus of the perineal region they are "up against a tough proposition." Dr. J. F. MONTAGUE, in the interesting study of the subject now before us, makes no claims to have discovered a specific. Indeed, at the end of his volume entitled *Pruritus of the Perineum*[1] he writes very emphatically about the obstinate nature of the disease. His investigations are exhaustive, and, not insensitive to the attractions of medical history, he informs us that as early as 1688 the subject attracted medical comment. In 1694 Josephus Lanzonius sought to explain its origin and course on the then current astrological systems. The reader will find a very useful summary of the literature of the subject down to the present time, and a useful bibliography of modern literature is provided. Perhaps the most important part of the present volume is that which deals with pathology. Pruritus can easily be set up without the invasion of the tissues by bacteria, although such invasion may subsequently take place and act as an aggravating factor. Dr. Montague dismisses the *Streptococcus faecalis* as a cause, and states that the only organisms he has been able to find actually in the tissues are the *Staphylococcus albus* and *B. coli*. He recognizes two classes—(1) direct pruritus, (2) indirect pruritus, terms which correspond roughly with the older method of description as of local or constitutional origin, but he considers his own terms to be more scientific. He emphasizes very justly the importance of a thorough examination of the patient with a view to ascertaining the ultimate cause of indirect pruritus, and each of his patients is subjected to a most searching questionary. His opinion is that localized pruritus is an early symptomatic warning of visceral disease, and he advises that every case of anal pruritus should be subjected to a sigmoidoscopic examination, for he has seen many cases of early carcinoma of the rectum associated with pruritus, although the fully developed growth does not cause this symptom so often. While he emphasizes the importance of the constitutional treatment of indirect pruritus, his practical advice does not get much further than that bromides should be given; the section of the volume on treatment is indeed almost entirely devoted to the consideration of various local therapeutic devices. He mentions with guarded approval various ointments and lotions, and has a word of recommendation for *x* rays in skilled hands, but seems himself to prefer to employ ionic medication with zinc, mercury, or iodine. He also states that he has had good results from the administration of mixed vaccines of *B. coli* and the *Staphylococcus albus*. An interesting section of the chapter on treatment is devoted to the consideration of surgical methods for producing anaesthesia of the part. Many operations have been devised with this end in view, and the author ends by giving a description of one of his own, founded on that of Sir Charles Ball, in which the undercutting of the skin is the important principle; he has designed special instruments for the purpose, and claims that in many cases surgical procedures yield good results. As a complete and candid study of this distressing complaint and the means of dealing with it Dr. Montague's book is worthy of careful perusal.

ENDOCRINES AND COLOUR CHANGES.

The Pigmentary Effector Response,[2] by Dr. L. T. HOGBEN, is the first of a series of biological monographs and manuals edited by Drs. F. A. E. CREW and D. WARD CUTLER, and published by Messrs. Oliver and Boyd of Edinburgh. Their

[1] *Pruritus of the Perineum.* By Joseph Franklin Montague, M.D. Foreword by George David Stewart, M.D. New York: P. B. Hoeber, Inc. 1924. (Med. 8vo, pp. xiii + 186; 37 figures. 3.50 dollars net.)

[2] *The Pigmentary Effector Response: A Review of the Physiology of Colour Response.* By L. T. Hogben, M.A.Cantab., D.Sc.Lond., F.R.S.Edin. Biological Monographs and Manuals, edited by F. A. E. Crew and D. Ward Cutler. Edinburgh and London: Oliver and Boyd. 1924. (Demy 8vo, pp. x + 152; 17 figures. 10s. 6d. net.)

appearance will be welcomed by all interested in the biological sciences, for the vast bulk of current scientific literature makes it impossible for anyone to keep in touch with the recent work in more than a single limited field, and authoritative monographs have become the only means of obtaining more general information as to recent advances in science. This series of monographs will be of particular value, because it is an attempt to bridge the unfortunate division that has developed between animal morphology and physiology, a division that has done much harm to both branches of science.

The monograph by Dr. Hogben deals with the mechanisms by which colour changes are produced in reptiles, amphibia, fishes, crustacea, and molluscs, and it should prove of equal interest to physiologists and zoologists.

The author devotes special attention to the colour changes in amphibia, and the results recorded under this head are based very largely upon his own work. It is interesting to learn from him that the common grass frog possesses greater powers of colour change than the famous chameleon. The frog turns pale under light, warm, or dry conditions, and dark under dark, cold, or moist conditions. These changes are controlled chiefly by endocrine secretions; adrenaline turns the frog pale and pituitary extract turns it dark, and in both cases a small fraction of a milligram is sufficient to produce the effect. The statement on page 56 that 105 mg. of fresh posterior lobe of the pituitary produces a complete darkening of a frog is presumably a misprint, since on page 72 results are recorded which show that 0.1 mg. suffices to produce a colour change. The author found that the pars intermedia of the pituitary of the ox contained most of the melanophore activator, that the posterior lobe contained about one-twentieth as much, and that the anterior lobe contained about one-fortieth. These figures differ markedly from the distribution of the uterine stimulant of the pituitary, and probably melanophore activation and contraction of the uterus are produced by separate active principles. Hypophysectomy caused permanent pallor in frogs, and injections of pituitary extracts produced darkening in hypophysectomized frogs as in normal frogs. Similar experiments upon axolotls produced the same effects as in frogs. The melanophore activator substance was found to be present in the pituitary glands of mammals, reptiles, birds, amphibia, and fishes, but not in the dorsal tubercle of tunicates.

An examination of the mode in which colour changes are effected in other classes of vertebrates showed that a surprising variety of mechanisms existed. In all cases the colour changes were produced by expansion or contraction of chromatophore cells, but the mode of control of these cells varied greatly. In reptiles the melanophores are under endocrine control, for adrenaline causes contraction, but pituitary extract appears to be inactive; they may also be affected directly by light. In amphibia the melanophores appear to be entirely controlled by endocrine secretions. In fishes, however, the melanophores are under direct nervous control through the sympathetic neurones; the existence of endocrine control is uncertain, but pituitary extract produces contraction of the melanophores, the reverse effect to that produced in amphibia. Finally, it appears that in crustacea the melanophores are directly stimulated by light.

The results recorded in the monograph certainly make the function of the pituitary more mysterious than ever, for apparently a specific melanophore dilator is present in the pituitary glands of all vertebrates, but only produces an effect on the melanophores of amphibia and fishes, and the effects so produced in these two classes are opposite.

The monograph as a whole is extremely interesting and suggestive and illustrates the great importance of the study of comparative physiology, for it reveals a surprising variety in the mechanisms which exist to produce a single simple physiological reaction. Furthermore, the facts established concerning the endocrine control of the melanophores suggest that a more extensive study of the endocrine systems of lower vertebrates might assist us to understand better the functions of these organs in mammals.

SPASTIC HEMIPLEGIA.

DR. NILS SILFVERSKIOLD'S monograph on infantile spastic hemiplegia[3] forms the fifth supplement of the *Acta Chirurgica Scandinavica*, published at Stockholm, but written, as is so much Scandinavian scientific literature, in German.

The author prefixes to his opening chapter the lines from *Richard III* which Dr. W. J. Little quoted in the discussion on his epoch-marking paper read before the Obstetrical Society of London in 1861, but he does not seem to be aware of the fact that W. J. Little described cases of spastic talipes and noted its association with premature birth in his book on club-foot which was published in 1839. Dr. Silfverskiold gives Little full credit for his work on this subject, but he is hardly justified in assigning spastic palsy as the cause of the club-foot from which the godfather of Little's disease himself suffered. This attribution is somewhat remarkable seeing that he prints the following footnote:

> "E. M. Little, consulting surgeon to the Royal National Orthopaedic Hospital, a son of J. W. Little [*sic*], has informed me that his father's left arm was not affected, and that he holds the associated foot deformity to have been probably poliomyelitic. The annexed disease history seems to me to speak for a spastic affection."

The desire to call the malady, as he says "with double right," Little's disease, seems here to have carried the author too far. We learn from Mr. E. Muirhead Little that he was told by his father himself that the disorder from which he had suffered was infantile atrophic paralysis, and the son had ample opportunity of verifying this diagnosis by personal observation. The case-history referred to was translated by Stromeyer from Little's own history in his Latin thesis for the degree of M.D.Berlin, and is characteristic of anterior poliomyelitis, as also are the references to the deformity contained in Stromeyer's own notes of the progress of the treatment. The illustration on page 4, which represents a plaster cast said to have been taken from W. J. Little's foot, is of small value as evidence one way or the other. Finally, the opinion of W. J. Little on such a subject is surely entitled to consideration.

Apart from these considerations, however, Dr. Silfverskiold's book is instructive and worth perusal. His first illustration is a reproduction of the picture by Ribera which was used by Mr. E. V. Lucas in his pamphlet "As the twig is straightened," noticed in the JOURNAL of May 3rd; it represents a characteristic hemiplegic beggar. In summarizing his treatise Dr. Silfverskiold says that in his experience of treatment tendo-muscular lengthenings and resections of motor nerves have given the best results, but that the somewhat uncertain nature of the morbid condition makes generalization difficult. As regards the mental condition he makes the surprising statement that in 82 per cent. of his cases the intelligence was good. In the absence of a definition of "good intelligence" it is difficult to compare this estimate with some others, which would place the proportion of mental deficients much higher. Thirteen per cent. of the author's cases suffered from epilepsy. Transplantation of the origins of muscles has given comparatively good results. By this means muscles such as the hamstrings which acted upon two joints were limited to action on one joint only. He concludes in the words of W. J. Little (whose initials he persists in transposing), that "surprisingly good results can be obtained by patience and rational therapy." The book is illustrated with 73 figures, some of which are from kinematograph films.

OTO-LARYNGOLOGY IN GENERAL PRACTICE.

A NOTICE of Dr. GEORGES PORTMANN'S handbook appeared in this journal in March, 1923, and Dr. SCOTT STEVENSON now presents an English version with the title *Ear, Nose, and Throat Treatment*.[4] The word "version" is used by design,

[3] *Acta Chirurgica Scandinavica*. Supplementum V. Aus der Orthopädischen Klinik des Karolinischen Med.-Chir. Instituts. Vorstand: Prof. Patrik Haglund. "Orthopädische Studie uber Hemiplegica Spastica Infantilis," von Nils Silfverskiold. Stockholm, 1924. Kungl. Boktryckeriet. P. A. Norstedt und Soner. (Demy 8vo, pp. 242 + ix.)

[4] *Ear, Nose, and Throat Treatment in General Practice*. By Georges Portmann, M.D. Translated and edited by R. Scott Stevenson, M.D. London: William Heinemann (Medical Books), Ltd. 1924. (Demy 8vo, pp. viii + 180; 25 figures. 10s. 6d. net.)

for Dr. Stevenson has done far more than merely present a translation, which indeed would have had comparatively little value. Realizing the value of Dr. Portmann's little book, the translator undertook to present an English equivalent, and he has succeeded well. Thus all the weights and measures have been replaced by their English equivalents and the ingredients of prescriptions have been replaced in some instances by those usual in England. The same applies to various other details. The translator therefore has faithfully reproduced the spirit of the original without any slavish adhesion to the letter. The book contains a wealth of prescriptions and modes of treatment for all the conditions, not requiring operation, likely to occur in general practice, but it will be useful to the specialist as well as to the general practitioner.

TOWN PLANNING AND HOUSING.

THE housing problem is not going to be solved by any one of the many proposals put forward either by the Government of the day or by private individuals; and in the critical consideration of the schemes, each involving the financial support of the State, of Dr. Addison, Mr. Neville Chamberlain, and the present Minister of Health (Mr. Wheatley), the powers contained in the Housing, Town Planning, etc., Act, 1909, of Mr. John Burns have not received the consideration they deserve. The reason for this may possibly be that that Act is one of the worst examples of legislation by reference, and it has been made still more difficult to understand by amendments in subsequent legislation on housing. It provides in the first place for the preparation by a local authority and the approval by the Minister of Health of a town planning scheme. The task of preparation is not an easy one, and the official upon whom that duty falls may well be forgiven if at the outset he is in despair at accomplishing it with any satisfaction to himself or advantage to the local authority. In such circumstances he will welcome the *Law and Practice of Town Planning*,[5] by Mr. SYDNEY DAVEY, M.A., LL.B., of the Middle Temple, who has had the very capable assistance of Mr. FRANCIS C. MINSHULL, chief assistant solicitor to the corporation of Birmingham. The difficulties attending the administration of the 1909 Act are not connected solely with the many references to other Acts of Parliament, for the Minister of Health has a general control over town planning schemes, and may make regulations with respect to them. Then, too, there are various phrases and expressions contained in the Act which are new to legislation. For example, "amenity" occurs more than once, and as might be expected soon called for a precise definition, which the authors state was given by a judge of the high court as "pleasant circumstances or future advantages," and he added, "wide streets and plenty of air and room between houses seem clearly to be amenities, and a provision to secure them by setting back houses to a given line seems to me to be a provision with a view to securing amenity." Although only twelve town planning schemes have so far been approved—the first, in 1913, for Birmingham, and the latest, in 1922, for Luton—there have already arisen many points in procedure which could only be made clear by decisions of the law courts, and these are referred to by the authors with elucidatory comments. This is especially noticeable in the chapter dealing with the acquisition of land, which takes up nearly fifty pages of the entire volume. Whether land is acquired by agreement, or, as the law provides, compulsorily, there are definite legal conditions, each one of which must be fitted in as exactly as the pieces in a jigsaw puzzle; in this chapter the way is made easier for those who have to advise a local authority on the question of land purchase. It would perhaps be going too far to say that it would be possible to prepare a town planning scheme with the assistance of no other literature than the volume before us; but if such a claim were made it would be difficult to refute it, for in addition to the many detailed references in the body of the work there are 120 pages of appendices containing the text of Housing Acts and Town Planning Acts, of Orders made by the Minister of Health and the Model Clauses of the Ministry of Health for use in the preparation of schemes. The last named are skilfully and profusely annotated by the authors. We can heartily recommend the work to that increasing number of public officials who are concerned with housing problems.

The speculative builder of artisans' dwellings in the nineteenth century was rarely able to rise above the interminable street of houses, each house the counterpart of its neighbour with no deviation either in elevation or in plan—mass production at its worst. Whatever adverse criticism may be levied against the post-war houses it must be admitted that we are no longer reproducing these long unbroken terraces, and that some advance has been made in the art of grouping small houses. Whether as much can be said for the architectural features may be open to argument. Those who desire to see erected in the future houses that are not only well planned and economically built, but also of a pleasing appearance, will derive much assistance from *Small Houses for the Community*,[6] by Mr. C. H. JAMES, A.R.I.B.A., and Mr. F. R. YERBURY, secretary of the Architectural Association, to which a foreword has been contributed by Mr. RAYMOND UNWIN, F.R.I.B.A., a past-president of the Town Planning Association. The six chapters of the work are devoted to a general survey of the housing problem; the selection of a site; the economics of building; site planning; design and materials; and the construction and internal arrangements and finish of the house. There is a great deal of sound advice which is evidently the result of considerable experience in the construction of small houses, and the general impression a perusal of the volume leaves is that it is possible to erect houses and especially groups of houses economically, and at the same time pleasing to the eye. The authors consider that single houses are to be avoided and are not enamoured of semidetached dwellings, and while "blocks of four make a unit of reasonable size and lend themselves to good architectural treatment, blocks of six—even of the most simple design—without a break in the front can look charming and give a feeling of restfulness seldom obtained in housing schemes." In the chapter on the selection of the site five main points are laid down as essential, including, for a rural area, the question of sewage disposal. One important consideration has been omitted, as many medical officers in rural areas would be able to testify to their sorrow: that is the provision of an adequate water supply. In an appendix is given in detail a specification, bill of quantities, and detailed drawings of fourteen houses erected in Welwyn garden city. A valuable feature of the work is the inclusion of 132 photographic reproductions of houses and groups of houses recently erected in various parts of England and Wales, in Holland, Sweden, and Denmark. The sharpness of these photographs and the manner in which the details are brought out is beyond praise, and the publishers are to be congratulated on the excellence of the reproductions.

THORPE'S DICTIONARY OF APPLIED CHEMISTRY.

ONE of the most useful books for general reference on chemical matters is THORPE'S *Dictionary of Applied Chemistry*.[7] A long experience of its use confirms and increases this estimate of its value. Whatever the subject sought, it always appears as though the question in the reader's mind had been directly anticipated; hardly any matter having a chemical aspect is missing. Above all, the information is conveyed in terms devoid of pedantry or ambiguity.

Volume V of the new edition has now reached us. It contains an unusually large number of subjects of general

[5] *The Law and Practice of Town Planning.* By Sydney Davey, M.A., LL.B., of the Middle Temple, Barrister-at-Law, and Francis D. Minshull, LL.M., Chief Assistant Solicitor to the Corporation of Birmingham. London: Butterworth and Co. 1923. (F'cap. 4to, pp. xxxvi + 267 + 40. 25s. net.)

[6] *Small Houses for the Community.* By C. H. James, A.R.I.B.A., and F. R. Yerbury, Secretary of the Architectural Association, with a Foreword by Raymond Unwin, Dr.Tech.(h.c.)Prague, Chief Architect (Housing), Ministry of Health. London: Crosby Lockwood and Son. 1924. (Royal 4to, pp. xi+32+lvi; 140 plates. 31s. 6d. net.)

[7] *A Dictionary of Applied Chemistry.* By Sir Edward Thorpe, C.B., LL.D., F.R.S., assisted by eminent contributors. Vol. V, revised and enlarged edition. London and New York: Longmans, Green and Co. 1924. (Med. 8vo, pp. viii + 722; illustrated. 60s. net.)

interest; among them are photography, photosynthesis, proteins, and radiology. It is one of those books which, when an inquirer resorts to it for some particular piece of information, beguiles him into reading on and on. Mention is found of the use of ozone for the purification of drinking water, and the municipalities where it has been adopted for that purpose are enumerated. The monograph on petroleum covers a wide field; besides the technology, economics, and geographical occurrence, it has attractive elements of history and romance. We are shown in the oilfields of the Caucasus the natural origin of one of the mythical stories of Prometheus. The magic oil which Jason received from Medea during his search for the golden fleece was the produce of her father's property in oil springs. The article on photography supplies recondite facts for the manufacturer of photographic plates as well as information for the practitioner of photography in its various applications. The several causes of imperfection in the results are well elucidated. An ably written treatise on radiology is followed by an article on the radish! The apparent incongruity of subjects only serves to exemplify the comprehensive character of the work. The thoroughness of treatment is illustrated by the fact that a chemical description is given even of the colouring matter in the radish. Every effort appears to have been made to keep the work abreast of modern advances in knowledge. Much new matter has been added and many articles have been rewritten. Thorpe's *Dictionary* not only maintains its old status but continues to grow in usefulness.

AN ANTHOLOGY OF SCIENCE.

UNDER the title *Cambridge Readings in the Literature of Science*[8] Mr. W. C. DAMPIER WHETHAM, sometime Senior Tutor of Trinity College, Cambridge, and his daughter have collected in an attractively got up volume passages from great writers on the milestones of science, and have added admirably worded introductory and explanatory paragraphs containing some biographical touches. The collection is intended to illustrate the development of scientific thought. The three subjects treated in this volume are the structure of the universe (cosmogony), the nature of matter (atomic theories), and the development of life (evolution), and along these lines the editors try to trace the thoughts of man from the first and second chapters of Genesis, with which the section on cosmogony begins, down to the latest revelations of the telescope and the laboratory, such as Einstein's, Sir Ernest Rutherford's, Dr. F. W. Aston's, and the late H. G. J. Moseley's researches. The theory of evolution begins with a translation from Aristotle's *Historia Animalium*, and before the extract from Darwin's *Origin of Species* we are given part of the first chapter of the Rev. T. R. Malthus's *Essay on the Principle of Population* (1798), which, forty years later when Darwin read it in 1838, suggested the means of natural selection. In the concluding note on present progress the editors remark that biology is now at a stage perhaps comparable with that of chemistry at the time of Lavoisier, and that with the help of the experimental method advance is taking place in many directions, but that it is doubtful, as Henri Bergson observes, whether the forces which guide and control the evolutionary movement will thus be revealed.

NOTES ON BOOKS.

THE first volume of the *Practical Medical Series*,[9] which is under the general editorial charge of Dr. CHARLES L. MIX, is devoted to general medicine and is divided into four parts. The first, which deals with infectious diseases and endocrinology, is edited by Dr. George H. Weaver, who gives a good account of recent progress in knowledge of acute infectious and various other disorders and diseases in the lower animals. In the second part Dr. Lawrason Brown discusses diseases of the chest, excluding the heart, but including a section on tuberculosis. In the third part Dr. Robert B. Preble deals with diseases of the blood and blood-making organs, and diseases of the blood vessels, heart, and kidneys. The fourth part, which is under the joint editorship of Drs. Bertram W. Sippey and Ralph C. Brown, is concerned with diseases of the digestive system and metabolism. The book is well illustrated and indexed and will prove a useful work of reference.

In his little book on *Man's Mental Evolution*,[10] which is an expansion of a paper read before the Ethological Society on April 9th, 1923, Dr. HARRY CAMPBELL considers the factors which have determined man's mental evolution. Those which have determined the evolution of intelligence are first discussed, and then the evolution of the feelings. The three chief factors which increased the survival value of intelligence after the pre-human ape left the forest to become a hunter, and which continued to operate up to a time when full humanhood was attained, are stated to be a hunting career, polygamy, and intertribal warfare. Dr. Campbell maintains that there is no limit to the extent to which the human intellect may evolve if the conditions were again and continuously to be such as to ensure survival value and intelligence. An appendix is devoted to a discussion of hedonism.

Veterinary anatomy, although dealing with many subjects, has always adopted the horse and the dog as the standard animals. A standard book on the dog already exists. It is only with the publication of Dr. Bradley's *Topographical Anatomy of the Head and Neck of the Horse*,[11] however, that a complete set of modern textbooks has become available for the student in the dissecting room. This volume is the last of a trilogy on the "Topographical Anatomy of the Horse." Dr. Bradley has adopted the B.N.A. nomenclature, and treated his subject in the light of comparative anatomy—giving the names used in the human science to corresponding structures in the horse. The book is essentially a guide in dissection, but it is more than a mere compilation of dissecting notes. In addition to a detailed description of each structure there are many admirably drawn illustrations by Mr. James T. Murray, whose work in connexion with human anatomy is well known. The author introduces many very valuable footnotes on the etymology of the terms used in anatomy—explanations which serve to connect the nomenclature of human anatomy with that of animals.

The *Proceedings of the Third International Congress of the History of Medicine*, held in London in July, 1922, have just been published. The volume contains sixty-one papers, dealing with the history of epidemiology, anatomy, obstetrics, pharmacology, and miscellaneous subjects. Copies can be obtained, price one guinea, on application to the General Secretary, Dr. J. D. Rolleston, 340, Upper Richmond Road, S.W.15.

[8] *Cambridge Readings in the Literature of Science.* Being Extracts from the Writings of Men of Science to illustrate the Development of Scientific Thought. Arranged by William Cecil Dampier Whetham, M.A., F.R.S., Fellow of Trinity College, Cambridge, and Margaret Dampier Whetham of Newnham College, Cambridge. Cambridge: The University Press. 1924. (5½ × 8, pp. xi + 275; 8 plates, 75 figures. 7s. 6d. net.)

[9] *The Practical Medicine Series.* Under the general editorial charge of Charles L. Mix, A.M., M.D. Vol I—General Medicine, Series 1923. Chicago: The Year Book Publishers. 1923. (Cr. 8vo, pp. 678; 61 plates.)

[10] *Man's Mental Evolution, Past and Future.* By Harry Campbell, M.D. London: Baillière, Tindall and Cox. 1923. (Cr. 8vo, pp. v + 74. 3s. 6d. net.)

[11] *The Topographical Anatomy of the Head and Neck of the Horse.* By O. Charnock Bradley, M.D., D.Sc., M.R.C.V.S. Edinburgh: W. Green and Son, Ltd. 1923. (Roy. 8vo, pp. xii + 228; 96 figures. 21s. net.)

MEDICAL AND SURGICAL APPLIANCES.

A Radiant Heat Box for the Fingers.

MR. R. M. HANDFIELD-JONES, Assistant Director, Surgical Unit, St. Mary's Hospital, Paddington, writes: The use of radiant heat in the treatment of infected fingers and hands has been mentioned by several authors, and Messrs. John Weiss and Son have made a special box to my design for the hot air treatment of such cases. The box is of wood lined with asbestos, and measures 13 by 10 by 7 inches. Four long cylindrical carbon filament lamps give the heat, and they can be supplied at the desired voltage. They are shaded by strips of asbestos to prevent any possibility of the lamp touching and so burning the hand. A thermometer has been fixed into the top of the box, so that the reading may easily be checked. It consists of two halves, equal in size, and the whole apparatus is light and easy to use. The hand is placed in the box, which is then shut and securely fastened, and any gaps left around the wrist at the entrance to the box are closed with wool or a towel. The current is switched on and the temperature allowed to reach 120° F.—which it does in five minutes—and it is then kept at that level for twenty minutes. The advantages of this box are that it provides a small, light, portable heat-bath for the hand, that it can be used anywhere where electric current is installed, and it provides a method which gives admirable results in clearing up infections of the hand and preventing adhesions of tendons and stiff hands.

MIGRAINE AND ITS TREATMENT.

DR. A. F. HURST'S SAVILL LECTURE.

THE Savill Lecture, founded in memory of Thomas Dixon Savill, M.D., in connexion with the West End Hospital for Nervous Diseases, was delivered by Dr. ARTHUR F. HURST on July 3rd, at the house of the Royal Society of Medicine, with Sir WILLIAM HALE-WHITE in the chair.

Dr. HURST took migraine as the subject of his lecture, and mentioned that his choice had been influenced to some extent by a desire to show how little scientific foundation there was for the greater part of the biochemical miasma by which this condition in recent years had been surrounded. There were two essential factors to be considered in the pathogenesis of migraine—one central, the other peripheral.

The Central Factor in Migraine.

The central factor was a constitutional and usually inherited predisposition. Migraine, epilepsy, and asthma alike depended upon the constitutional tendency of certain parts of the brain to become "storm centres" under given conditions. These affections differed from one another in respect to the part of the brain concerned. The cerebral localization of the storm centre in epilepsy and asthma was comparatively simple, but in migraine it was more difficult to define. A biochemical factor in migraine had been frequently suggested, though there was little agreement as to its nature. Dr. Hurst's experience, however, pointed to an ocular origin as being of importance in the great majority of cases, if not in all.

The theory that migraine was a kind of anaphylactic phenomenon, like asthma, was certainly attractive and required consideration. He could not help feeling, however, that the claims made in this particular were extravagant. He believed that a toxic idiopathy was very often present, but he had not been able to obtain any positive evidence that this was ever the exciting cause of the attacks of migraine. Most of what had been written on the relation between the internal glands of secretion and migraine was purely speculative. It was curious, also, to find the widespread adhesion to a theory which had so little evidence to support it as the uric acid theory of migraine. In many private cases in which he had had occasion to make a most careful examination he had found no evidence that migraine depended wholly or in part on gastro-intestinal toxaemia or metabolic disorder. He had found no justification for the view recently propounded by a writer in the BRITISH MEDICAL JOURNAL that migraine was due to recurrent attacks of dilatation of the stomach. In no case had he or those working with him found any abnormality of this kind, and the author in question had brought forward no evidence in support of the theory. Many of the severest cases of intestinal toxaemia occurred in people who had been poisoning themselves with aperients with a view to getting rid of the migraine. A psychical stimulus was occasionally brought into evidence, but this was comparatively unimportant. Sir John Herschel, who, like a number of other astronomers, suffered from migraine, found that he could induce an attack by picturing in his mind the visual phenomena which usually accompanied it, and the lecturer himself had known a patient to get an attack on looking at a wall-paper which had a zigzag pattern. Many of the cases in which attacks occurred with a certain regularity—as, for example, every Sunday morning, or on the first day of the menstrual period—might be due simply to expectation.

The Peripheral Factor.

Dr. Hurst next turned to the question of peripheral stimuli. Some modern writers on migraine ignored the ocular factor entirely, or gave it a minor importance, and few gave it the prominence which he was convinced it ought to have. During the early years of the war he had occasion to see a number of cases with Lieut.-Colonel R. H. Elliot, and his (the lecturer's) views as to the importance of the part played by the ocular factor dated from that association. With the ocular condition rectified he found in his treatment of migraine that the improvement was almost always considerable and that complete cures were common. Colonel Elliot had given him some brief details, which he read, of the ocular defects commonly associated with migraine. It appeared that very small errors of refraction were able to produce migraine, especially in highly strung clever people, with a very irritable migraine storm centre.

The typical attack of migraine was unmistakable, but attacks varied in some degree among different individuals, and even at times in the same individual. He had seen many cases in which the gastric symptoms were so pronounced that the diagnosis of some gastric disorder had been made. In most cases the diagnosis could only be made after a careful inquiry into the associated symptoms. The so-called bilious attacks in children were most frequently due either to migraine or to appendicitis. There did not seem to be any distinction between these so-called bilious attacks and the so-called psychical vomiting. Diarrhoea might replace vomiting in some cases of migraine, and the headache and nausea disappeared as quickly after the bowels were well opened as they did after vomiting. He thought that the possibility of migraine should be considered in every case of paroxysmal headache, even if such headache was not strictly unilateral.

Prophylaxis and Therapeusis.

The only cure for migraine was "not to have it." The storm centre got out of practice as time went on. It was the same with epilepsy. If an epileptic had no fits for three years he could safely reduce his bromide, but the lecturer doubted whether it was wise for him to give it up entirely even after two or three years of further freedom. As for asthma, he knew a man who had had an attack of asthma as a lad of 14 while at Southampton. Afterwards he sailed with his family to South Africa, where he remained for twenty-five years, and during all that time he was free from asthma. On returning to this country he landed at Southampton and immediately had a severe attack. Apparently other places in England, even seaports, did not affect him in the same way. In the case of migraine, after some years of freedom from attacks, if the general health was good and the vision for ordinary purposes satisfactory, the spectacles might be worn less constantly, but if the individual got fatigued the attacks were liable to recur, especially with the slightest eye-strain. In most cases the attacks became less severe with advancing years, and they were infrequent after 50.

The most important treatment was the correction of the eye-strain. Personally, he had never seen a case in which eye-strain was not present, and only two in which its correction did not either cure the patient or lead to considerable improvement. The reason why the importance of the ocular factor was not more widely accepted was that few oculists gave to the patient with migraine the attention that he required. Muscle-balance defects were particularly difficult to correct. Moreover, many sufferers from migraine were proud of their good eyesight and unwilling to take to spectacles, and in the case of some patients vanity played a part in preventing proper treatment.

With regard to drug treatment, Dr. Hurst said he had never been convinced that arsenic was of the slightest use. Bromide in small doses appeared to help some patients; it had no effect in migraine in the least comparable to that which it had in epilepsy. Luminal, as advocated by Wilfred Harris (BRITISH MEDICAL JOURNAL, October 28th, 1922, p. 786), was useful, given at the same time as the bromide. But if the ocular defects had been dealt with it was unlikely that drugs would have to be taken at all. Attempts to treat the supposed intestinal toxaemia by aperients, or digestive or metabolic disorders by freak diets, were likely to upset the patient's general health without influencing his migraine, and they had the further disadvantage of making the sufferer from this paroxysmal

neurosis a prey to all kinds of imaginary ills. The examination and treatment of the eyes in the case of migraine should only be undertaken by a specialist, and by a specialist who was ready to devote much time and study to the subject.

NATIONAL ASSOCIATION FOR THE PREVENTION OF TUBERCULOSIS.

ANNUAL CONFERENCE.

THE tenth annual conference of the National Association for the Prevention of Tuberculosis was held in London on July 3rd and 4th. The Hon. Sir ARTHUR STANLEY presided, and the attendance, which included delegates from many county and county borough councils, was very large. The first day was devoted to a visit to the Burrow Hill training colony at Frimley, Surrey. This is a colony with accommodation for about eighty ex-service men, twenty of whom still require sanatorium treatment, while the remainder, having had such treatment, are well enough to be taught market gardening, light farming, or rural carpentry. The financial position of this project, which was fathered by the association, is causing some anxiety.

The Value of Training Colonies in Treatment.

The principal discussion of the conference followed upon this visit to Frimley, and concerned the part played by training colonies in the treatment of tuberculosis.

Dr. F. N. KAY MENZIES (director of hospital and medical services, Joint Council of the Order of St. John and British Red Cross Society) recalled the history of training colonies, the first mention of which he had found in the BRITISH MEDICAL JOURNAL of July 23rd, 1898, in the course of a plea by Sir Robert Philip for the establishment of farms for tuberculous patients. The farm colony was a natural evolution from the sanatorium, and was included in the model tuberculosis scheme adopted and recommended by the Departmental Committee in 1913. The village settlement belonged to a different and far more ambitious category, and the speaker felt that, however admirable the work done by the Papworth and Preston Hall settlements, which were the best examples of the kind in this country, the capital expenditure involved and the heavy cost of maintenance ruled out the village settlement as a practical proposition for local authorities. On the other hand, vocational training centres like Burrow Hill, which were an expansion of sanatorium treatment, were sound in their conception and, he thought, hopeful in their results.

Dr. ALEXANDER SANDISON (Ministry of Pensions) thought that some harm had been done by the wide prevalence of the notion that the only occupations fit for tuberculous patients were on the land. He wondered how many tuberculous patients, sent to the land, had dug their own graves. Very many patients could be allowed to return from sanatoriums to their own homes and workplaces, provided these were sanitary. He pointed out the favourable position of the pensioner in comparison with the unpensioned civilian on entering a colony. The success of the colony depended upon some financial provision being made—such as was made in the case of the pensioner—for the man's family whilst he was undergoing training.

Dr. LISSANT COX (Central Tuberculosis Officer, Lancashire) said that 52 patients from his county had been sent to training colonies; 12 of these were still in residence, but of the 40 who had returned only 7 had completed their course of twelve months. He thought that the name "colony" should be changed to "sanatorium," and the institutions merged, for at sanatoriums proper there was need for the provision of some purposeful work. His experience of seventeen care committees in Lancashire—bodies which did extraordinarily good work—was that the positions that they were able to find for ex-institutional patients frequently bore very little relation to the work which those patients had been trained for in the vocational colonies.

Dr. T. H. PEYTON (Chief Tuberculosis Officer, Cheshire) considered that the results of the treatment of tuberculosis during the last twenty years had been disappointing, except in so far as treatment itself had contributed to prevention. Not the least disappointing thing was the reintroduction of the patient into employment. Employers were unwilling to engage a tuberculous workman, and therefore an attempt had been made in his locality to train the men to become productive on their own account, but this had been a failure. Dr. Peyton drew attention to the progressive disappearance of tuberculosis. In his administrative county the deaths from pulmonary tuberculosis had steadily gone down from 452 in 1919 to 344 in 1923, and the death rate was now 0.54 per 1,000 of the population. In his view this decline was due to the careful shepherding of infective agents. Tuberculosis prevention was not merely a matter of housing. Formerly at Port Sunlight, where housing conditions were ideal, tuberculosis was rife, but the incidence of new cases fell sharply after a policy was decided on whereby consumptives were separated out.

Dr. NOEL BARDSWELL (Principal Assistant Medical Officer, L.C.C.) said that there were in London a number of men who had passed through these training institutions. The training they had received, though not of much value *qua* education, had anchored these men to treatment for a longer period than ordinary sanatorium life would have held them, and this might partly make up for the failure in other respects. Dr. E. E. PREST (Ayrshire Sanatorium) said that in his area a certain number of cases had been sent to training colonies, but none of them had been successful. Similar opinions, on the whole unfavourable to the colonies as means of getting the men back into self-supporting employment, were expressed by one or two of the lay representatives present.

The Minister of Health.

The conference was addressed by the Minister of Health, the Right Hon. J. Wheatley, M.P.—an address which Sir Robert Philip described as revealing the Minister as a scientist, a philosopher, and a humanist.

Mr. WHEATLEY said that the fight against tuberculosis was a long one, but it was a winning one. In 1847 the number of persons per million of the population who died of this disease was 3,189; in 1861 it was 2,675; in 1881 it was further reduced to 1,923; in 1901 it stood at 1,263; and in 1921 at 854. But there were still 70,000 fresh notifications every year. The decline in the disease had a very close relation to the improvement in social conditions during the same period. The sanatorium was of undoubted value in two ways: it contributed to the education of the patient in rules of health, and it prolonged his life. The problem was how to deal with people after they left the sanatorium. Every local authority should, without delay, organize an after-care committee; this should not be left to voluntary effort, although the members of the committee need not be members of the authority. Village settlements were doing very well, but even at their peak of success they could not be expected to solve a problem of these dimensions. They would provide at best for a few thousands, and the people concerned were to be counted by hundreds of thousands. He had often wondered whether there could not be evolved some system of workshops from which the men could return to their own homes at night, if these were reasonably suitable, under conditions which would ensure safety to their families. He referred, with a wry face, to the difficulty of extracting money from the Treasury, which was equally obdurate whatever the political complexion of the Government. He did not want to cast his burden on other shoulders, but he would like to remind those present that this country was to a large extent under local government, and that it rested with the local authority to evolve a practical scheme which would open the doors of the Treasury. He promised that any scheme of the kind which was submitted to him would receive most careful consideration.

Following on the Minister's address, a motion by Sir ARTHUR STANLEY was carried:

> That what is most needed in the work of the prevention of tuberculosis is better provision for after-care, including workshop schemes, and that the council of the association be instructed to give special consideration to this matter and submit definite proposals to the Minister of Health.

Care Committee Work.

The council of the association referred in its annual report to the increasing evidence that the lack of organization of care committees was the one weak link in the chain of tuberculosis schemes. The council is now considering the most practical means of establishing care committees on a common principle all over the country, and Colonel J. A. ELLIS, who has made a preliminary survey, brought forward the results of his investigations at another session of the conference. He said that the present apparent inactivity of many committees was due to two conditions—in the first place the committees were far too insular, and in the second place there was not sufficient publicity.

The personnel of the committees should be drawn from a less narrow area, and should include representation of employers and tradespeople, and of the local social, educational, and religious life. He thought that there were about thirty occupations suitable for the men with whom the committees would have to deal, and six suitable for the women.

A discussion followed in which many practical suggestions for the greater efficiency of care committees were made.

UNIVERSITY COLLEGE, LONDON.

AT the Assembly of Faculties last week Lord CHELMSFORD, Chairman of the College Committee, who was in the chair, implied that the Government has under consideration the propriety of instituting a scheme for the reform of the University of London, which, he said, had received scant courtesy at the hands of the Governments which had been in office since the Haldane report in 1914. Action had already been taken on the report of the Royal Commission on Oxford and Cambridge, issued in 1919, and it was the duty of any Government in power to deal with the University of London. Lord Chelmsford was understood to refer to the possibility of the appointment of a Royal Commission.

The Provost, Sir GREGORY FOSTER, said that the College was endeavouring to take full advantage of the many important developments of the last few years. He referred especially to the gift of the Rockefeller Foundation and to the new Ramsay laboratory, which was organized on a post-graduate basis and was available for those who had already had training either in chemistry, physics, or engineering. The College had 1,568 full-time students, of whom 1,195 were working for one of the degrees of the University of London. Adding the part-time students the total number registered was 2,847.

The Dean of the Faculty of Medical Sciences, Professor A. J. CLARK, made a special report on the faculty. The past year, he said, had been memorable in the history of the Faculty of Medical Sciences, for during its course the splendid new building, provided by the generosity of the Rockefeller Foundation, had been taken into use. The new building and the extra equipment thus available afforded unique opportunities for the advancement of teaching and research in the medical sciences. The excellent facilities the laboratories provided for original investigation had drawn a number of research workers from all parts of Great Britain and from all parts of the Empire; the Rockefeller Foundation and the National Research Council had sent nearly twenty of their research fellows, who come from all parts of the world, and in addition about ten other foreign graduates had come independently of these agencies. The resulting congregation of students from every quarter of the world, bringing with them a wide diversity of knowledge and interests, had produced an atmosphere very favourable to the vigorous prosecution of research. The advancement of the medical education of undergraduate students was, however, of equal importance for the progress of medical science, since progress in knowledge of medicine was fruitless unless medical men were trained in such a way as to permit them to take advantage of that progress in the treatment and prevention of disease. It was generally admitted that medical education called for reform in many respects; the chief reforms required had been very clearly pointed out by Sir George Newman in his reports on medical education in England. Since all branches of medical science were developing and expanding continuously, no system of medical education could be satisfactory which did not permit a continuous adjustment to the ever-changing form of the science taught. Teaching, moreover, was itself an experimental science, and progress could be made only by testing many things and holding fast to those which were good. Unhappily the present organization of medical examinations in the University of London was such as to hamper any attempt to develop the teaching of medical sciences along progressive lines. Teachers were fettered by a rigid system of examinations, which was devised to ensure the attainment of a least common standard in a number of different schools; unfortunately this system, with even greater certainty, checked any advance beyond such a minimum standard. A movement within the University to bring the medical examinations more closely into line with modern teaching was in progress, and its effective realization was one of the reforms most anxiously looked for.

Mr. EDWARD WOOD, M.P. (special visitor), who was Minister of Education in the last Government, said that the existence of the University of London in the midst of a crowded population was a potent instrument for maintaining and advancing the whole standard of education throughout the country. Not the least important purpose and result of education was to give a sense of the limitation of human knowledge, to check rash assumptions, and to foster honest thought.

INFANT WELFARE CONFERENCE.

WE reported briefly last week (p. 27) the opening proceedings of the third English-speaking Conference on Infant Welfare, which was held in Caxton Hall, Westminster, on July 1st, 2nd, and 3rd.

At the morning session on July 2nd, when the chair was taken by Surgeon S. L. CHRISTIAN, the representative of the Government of the United States of America, the subject of the overseas settlement of children was introduced by Sir ARTHUR LAWLEY (chairman of the Child Emigration Society). He referred to the pioneer work of Kingsley Fairbridge, who started a farm school in Western Australia twelve years ago. All the boys and girls who had been sent there were now making good on the land. In addition to teaching a trade to these adolescents, a very serious endeavour was made to mould their characters so that the best type of citizen should be ultimately produced.

Mr. PERCY ROBERTS (Dr. Barnardo's Homes) took as his text a quotation from a speech by the late Dr. Barnardo: "Well planned and wisely conducted child emigration, especially in Canada, contains within its bosom the truest solution of some of the mother country's most perplexing problems and the supply of the colonies' most urgent needs." The first party of Barnardo boys sailed for Canada nearly forty years ago, and Canadian Government officials report that not 2 per cent. have failed. Dr. MILDRED THYNNE followed with a paper on the diet of children on ocean steamers. She pointed out that the Board of Trade Regulations on this subject (1903) were inadequate in the light of recent dietetic knowledge, but, fortunately for children, voluntary enterprise had outstripped official regulations.

After a heated discussion on the question of emigration, the second subject for debate—child adoption—was introduced by Mrs. David MARGESSON (honorary secretary of the National Adoption Society). She claimed that every child should receive the upbringin planned for him by Nature—namely, that he should be one of a family. Out of 1,032 adoptions arranged by the society only 12 had proved unsatisfactory. Mr. HURST, K.C., stated in the paper which followed that public opinion had outpaced legislation on this subject. He compared and discussed the two bills now before Parliament.

At the afternoon session, organized by the National Society of Day Nurseries, and presided over by the chairman (the Hon. Mrs. EUSTACE HILLS), Sir BRUCE BRUCE-PORTER, who discussed the preventive side of day-nursery work, stated that 35 per cent. of the defects of children entering school were preventable. He considered that day nurseries in urban areas were a potent means of preventing these defects. He emphasized also the educational value for the mothers. Dr. CRICHTON MILLER, in dealing with the psychological benefit to children of being at a day nursery, contended that the daily companionship of other children soon weaned a child from his natural narcissism.

The discussion was opened by Lady ERLEIGH, who suggested a sun cure while the nursery children were having their afternoon sleep.

At a special meeting for members of Poor Law authorities Mr. THEODORE DODD discussed the incidence of maternal and infant mortality in relation to out-relief, and Mr. NATHAN STRAUS (U.S.A.) gave a lecture on milk.

At the morning session of July 3rd the available measures for securing healthy pregnancy and safe delivery were discussed. Dr. E. W. MORRIS, representative of the Commonwealth of Australia, presided, and Lady BARRETT urged that better practical training of both doctors and midwives was desirable, and that increased co-operation between them should be encouraged. She laid stress on the necessity for the fuller provision of maternity beds. Miss C. VAN BLARCOM followed with a paper describing the methods available in New York.

A special meeting was simultaneously arranged by the Eugenics Education Society, whose secretary, Mrs. HODSON, introduced an interesting discussion on the importance of heredity as the basis of child welfare work. To look upon welfare work from the point of view of its dependence upon the constituent parts of chromosomes was, she thought, illuminating.

The National Baby Week Council organized the afternoon session, when Lady RHONDDA, who presided, introduced a discussion on the scientific principles of the most effective methods of propaganda on maternity and child welfare. Mr. GREEN (University of Wales) dealt with the psychological aspect of propaganda, and Miss BABBITT (American Child Health Association) instanced the differences between American and English methods of propaganda.

The annual meeting of the Maternity and Child Welfare Group of the Society of Medical Officers of Health was held in the afternoon of July 3rd, when Professor MELLANBY gave an interesting account of his recent researches into dietetics, with special reference to the effect of diet upon rickets. He stated that it was his emphatic belief that wrong feeding was the most important factor in the production of rickets. Dr. DONALD PATERSON, who also contributed a paper, expressed the view that diet was only one factor in the causation of rickets. The conference ended with an evening lecture by Sir MAURICE CRAIG on mental hygiene in relation to child training.

On July 4th fifteen tours were arranged for delegates to visit various welfare institutions in London. A mothercraft exhibition was held at Carnegie House during the conference days and attracted well deserved attention. A bookstall, with copies of literature published in relation to infant welfare, was open at Caxton Hall. A film on ante-natal care, lent to the conference by the American representatives, was shown several times during the conference. The social functions—a reception at the Forum Club, Lady Helmsley's At Home, and the garden party given by Lady Lawrence and Mrs. Otter—were delightfully organized and well attended.

Great credit is due to Miss Halford, the honorary secretary of the National League for Health, Maternity, and Child Welfare, for her admirable organization of the business of the conference; it was no fault of hers that too much was attempted, for we must repeat the criticism made last week that too many important subjects were treated in a short time. Had fewer subjects been selected, or a range of interdependent subjects, with a few papers, and more time for discussion, delegates might have been able to arrive at some definite conclusion on debatable points.

NON-PROFESSORIAL STAFFS OF UNIVERSITIES.

A STATEMENT FROM EDINBURGH.

A MONTH ago (June 14th, p. 1068) we gave some account of the protest addressed to the University Grants Committee by the non-professorial staff of the University of Edinburgh with regard to the recent action of the University in proposing to reduce the rates of remuneration paid to the lowest grades of lecturers, and this has opened up the whole question of the status and remuneration of non-professorial teachers in the University. A committee of the non-professorial teaching staff has been formed, with Mr. John E. Mackenzie, D.Sc., Ph.D., of the medical faculty, as convener, and consisting of five representatives of each of the faculties of arts, science, and medicine. This committee has now put out a statement on the staffing of British universities with special reference to the position at Edinburgh. The matter is undoubtedly one of great importance; it concerns all the universities in Great Britain to a greater or less extent. We are not prepared at the present moment to discuss the matter in all its bearings, but we would desire at once to take exception to an argument which seems implicit in the statement now put out. We are not prepared to admit that a salary of a little over £1,000 a year is too much for a professor; on the contrary, it is too little. But we of course agree that salaries averaging about £200 a year are far too small for persons to whom a university commits the responsibility of teaching its students. With this reservation we believe the argument contained in the statement will command general approval. The statement is as follows, omitting a short preamble:

I.

To understand the present position it is essential to realize the past. In the earlier days of the University members of the non-professorial staff, where such existed, were considered rather as the private assistants of professors than as necessary members of the University, appointed by the University Court. More recently, with the natural growth and development of subjects, and in view of the increasing numbers who wish to avail themselves of a university education, there has taken place a great extension of the lectureship system; and particularly since about 1890 there has been a constant increase in the numbers of the non-professorial teaching staff, until at present, as compared with 52 professors, there are 248 readers, lecturers, and assistants.

With this growth in numbers there has taken place a progressive change in the character of the work done by a large proportion of this staff. Formerly the non-professorial staff consisted of assistants whose work was of a quite subordinate character. At the present time many lecturers give ordinary and honours courses, which qualify for degrees, for which the lecturers themselves are responsible and on which they report directly to the University Court; in other cases theoretical and practical courses are given by lecturers and assistants, of which they are in fact placed in charge, although they may not report directly to the University Court; in other cases lecturers and assistants give parts of theoretical courses and the bulk of the practical and tutorial instruction in co-operation with the professor. It is clear, therefore, that without the non-professorial staff many of the existing courses could not be given; nor could the degrees be taken with the same preparation.

The great change in the character of the work done by a large proportion of the non-professorial staff has naturally brought about *in practice* certain corresponding changes in the qualifications of these teachers and the length of time they continue in their offices. In the case of the old assistantships there was no inducement for the assistant to continue in his offices for more than a short period and no strong reason for retaining the same person in office. But in proportion as the work of a large section of the non-professorial staff has become work of the same kind as that done by the professors, and is work which, like theirs, must be carried on in a continuous way from year to year, the position has been greatly altered. Experience in teaching and examining, and the growing knowledge acquired by continuous work at, and research in, a subject have now the same importance in the case of the lecturer as in that of the professor, while the specialized nature of the work tends to restrict the possibility of a person who has once taken it up obtaining employment in another sphere. Moreover, although the non-professorial teacher must have similar mental attainments to those of the professor, yet with the paucity of chairs in all subjects, compared with the number of teachers necessary for efficient teaching, there is a certainty that many members of the non-professorial staff must anticipate spending the whole period of their active working life in that status.

In view of these considerations it is clear that, while it is essential that the best candidates should be attracted to the academic teaching profession, they will only be induced to enter and remain in the profession by offering a career comparable to that obtainable in other spheres. To effect this it is necessary that members of the non-professorial staff should be given *reasonable security of tenure, adequate remuneration,* and *a share in the administration of the University,* determined by, and corresponding to, the character of the educational work with which they are entrusted. The present disparity between the professorial and the non-professorial staff will be appreciated in the facts that during the current session 52 professors have drawn approximately £57,000 in salaries, as compared with a total of £65,000 obtained by the 248 members of the non-professorial teaching staff.

The necessity of improving the conditions of service of the non-professorial staff in these respects has long been realized by members of that body, and has repeatedly been urged on the University authorities. The general equity of these claims has also been admitted by several Royal Commissions and Government Committees, and was recognized, at any rate in part, by the modifications introduced by the University Court during the past generation. At no time, however, have the conditions of service of the non-professorial staff approximated to those of professors. Moreover, such modifications as have been introduced have been largely nullified by the action recently taken by the University Court in view of financial difficulties.

II.

Whereas appointments to chairs have usually been made *ad vitam aut culpam,* the appointments of members of the non-professorial staff have for the most part been of an annual nature. In practice, however, reappointment from year to year has been almost automatic, given efficient service, and in many cases no notice of reappointment has been received. During recent years, also, appointments to the various grades of the non-

professorial staff have been made at a definite basic salary and on the understanding that, if renewed, the appointment would be on the basis of an incremental salary. Further, by a rearrangement of grades, provision was made whereby many of those lecturers and readers whose responsibilities were most akin to those of professors had their positions made more attractive by being given seats on the various Faculties, and in some cases on the Senatus. Nevertheless, there had arisen a feeling that, while conditions of service were still far from being satisfactory, in practice substantial security had been obtained, and there was every prospect of a gradual improvement in conditions. The recent action of the University Court has falsified these hopes.

For the next few years the University must anticipate a reduction in the fee fund, as compared with that of post-war years, and to meet the consequent deficit on current expenses the University Court has adopted the following measures, among others. In the case of certain lecturers and assistants the Court has used the principle of annual reappointment to alter the terms of service by withdrawing the annual increments. It has also felt compelled to use this principle arbitrarily to terminate the appointments of certain lecturers in spite of long service and proved efficiency. By these means economies may have been realized, but they have resulted in an inequality of incidence as between grades and individuals, affecting not merely the present but also the future financial position of those concerned in so far as retiring allowances are based on contributions proportionate to salary. Also, it is understood that in the case of future appointments to all grades of the non-professorial staff, whether in respect of promotion within the University or of appointments made from without, the salaries will be fixed either below or at the present minima, and will be without increment.

The whole effect of these actions and proposals has been, and will be, to increase the existing disparity between the conditions of service of the professorial and the non-professorial staffs, and to make an academic career considerably less attractive to future entrants. Compared with competing professions the real reward has been reduced, and it is hardly to be expected that the best type of individual will continue to be attracted to a profession which offers so little security either of tenure or emolument. The fixing of reasonable conditions of service will necessarily entail serious consideration as to details, but it will be readily admitted that under the existing and suggested conditions the best men and women will neither enter nor continue in the profession.

Another disadvantage of the present position is the fact that, in spite of the recent admission of certain lecturers and readers to membership of Faculties and of the Senatus, the members of the non-professorial staff have no adequate direct representation on the governing bodies of the University. On the University Court they are not represented at all. Neither in respect of matters affecting their own interest nor of the general policy of the University is there any constituted machinery whereby members of the non-professorial staff can make known their views. This is the more to be regretted when it is realized that there undoubtedly are within the non-professorial body individual teachers who might strengthen the counsels of the University by virtue of their familiarity with general educational problems, or their administrative capacity.

This state of affairs is easily capable of remedy in certain directions. In other respects the problem of approximating the conditions of service of the non-professorial to those of the professorial staff depends largely on financial considerations. In the past there has been a tendency for all increases of capital, whether by gift or arising from surplus income, to be devoted to the creation of new chairs or the extension of buildings, while the salaries of the non-professorial staff have been almost entirely dependent on annual revenue. Since the conclusion of the war the University Court has greatly strengthened the teaching of the University by the establishment of new chairs and the erection of additional buildings. From what has been said above, however, it will be appreciated that endowment of a chair should be held to include the endowment of such non-professorial staff as may be required for efficient teaching within the department. Only by the provision of such means as will enable at least a part of the salaries of the non-professorial staff to be met otherwise than out of annual income can the University continue to attract and retain the best candidates, especially during a period of financial difficulty such as the present.

The general needs of the University in these respects only require to be more widely appreciated for the public and the Government to realize the urgency of the provision of more adequate endowment of existing as well as new departments. Without this there seems little hope of finding a satisfactory solution of a problem which affects, not merely the interests of a particular class, but the general welfare of the University as a national and imperial institution for the dissemination and advancement of knowledge.

THE ORIGINS OF CIVILIZATION.

ELEPHANTS AND ETHNOLOGISTS.

THE day may come when it will be possible for some ethno-archaeologist of consummate erudition and industry to write the history of the origin of civilization, but that time is not yet. The facts, though they are accumulating at a great rate, have not been sufficiently ascertained, nor is their interpretation agreed; in fact, unbeknownst to many, a conflict has arisen which has attained international—or, more properly, intercontinental—proportions. Once again the New World has come in, not indeed to adjust the

FIG. 1.—Stela B, at Copan. (Wood engraving by H. Gerrard, after Maudslay.)

balance, but to rebuke the pretensions of the Old, to vindicate once more the independence of America, and firmly to enforce what Professor ELLIOT SMITH rather provocatively writes of as "the ethnological Monroe doctrine." But if he is provocative, he has been provoked, and after a preliminary bombardment all along the line in his *Evolution of the Dragon* (1919) he has now disclosed his main offensive in a remarkable book, *Elephants and Ethnologists*,[1] very fully documented and clearly argued, copiously and strikingly illustrated, and to be read not only with interest,

[1] *Elephants and Ethnologists.* By G. Elliot Smith. London: Kegan Paul, Trench, Trübner and Co.; New York: E. P. Dutton. 1924. (Double cr. 8vo, pp. viii + 135; 63 illustrations. 15s. net.)

but some amusement, if the reader will take the trouble to understand where the fun comes in.

The important issue is whether civilization has been a single process, ordered though often interrupted, in which all the races of mankind have shared, some indeed to a very much greater extent than others; or has it taken origin among various peoples in several parts of the earth and reached, from these different starting places, results which everyone must admit are very similar? "It is," to quote the author, "the fundamental problem of the nature of man's inventive powers that has to be solved." The hypothesis of the independent evolution among different races of similar customs and beliefs, first put forward by William Robertson, once Principal of the University of Edinburgh, who wrote a history of America (1778), was adopted by certain German writers and supported by Tylor, though with some doubts, for he was too accomplished a man of science not to recognize that many facts pointed the other way. The earliest traces of civilization as expressed by art are probably the drawings in the French caves, and the races who made them knew the elephant and the mammoth. Recent excavations prove that for the beginnings of civilization in Mesopotamia and Crete, as well as Egypt, we must go to the dark backward and abysm of time. Indian civilization and art seem to have come later, to have been influenced from Mesopotamia, and to have influenced countries still further east, including Cambodia. The pre-Columbian civilization of Central America and its art are comparatively recent, covering the first ten centuries of the Christian era, but beginning perhaps a little earlier. The question is, Did this Central American civilization arise there independently, or were its essential elements diffused across the Pacific Ocean? North American archaeologists defend the former alternative with amusing vehemence; Professor Elliot Smith has written his book to establish the latter.

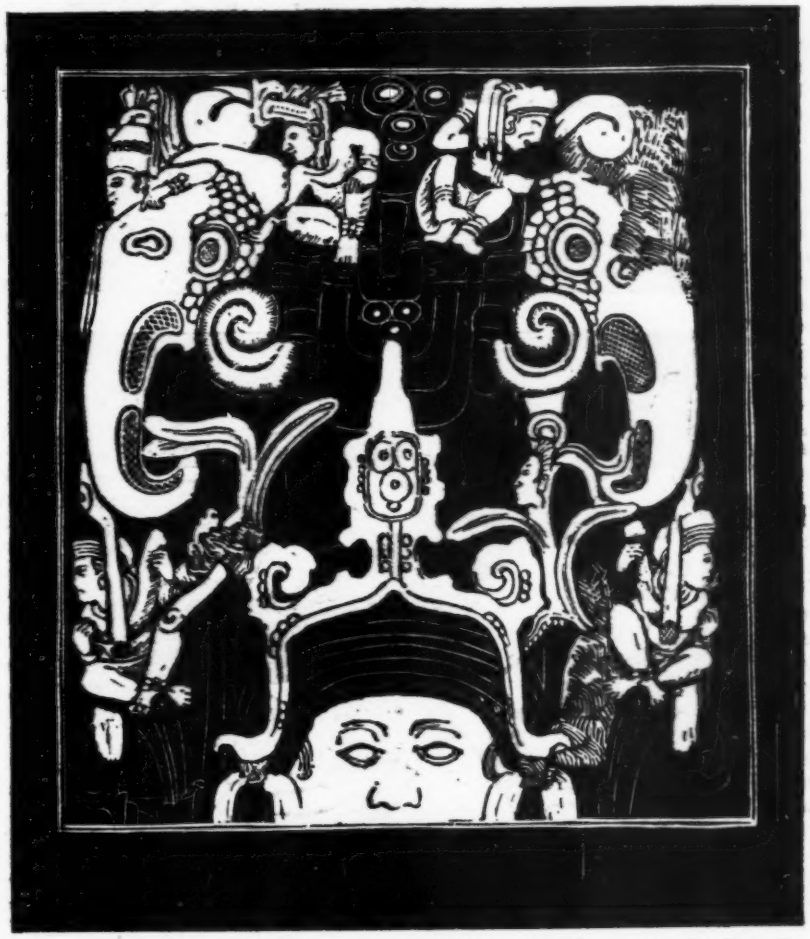

FIG. 2.—Semidiagrammatic drawing of top of Stela B. (Wood engraving by Gerrard, after Maudslay.)

The body of facts now accumulated is large and the field of inquiry wide; it has even been urged that on this account useful discussion is impossible, but it was not to be expected that this pusillanimous excuse would be accepted. Professor Elliot Smith has taken one crucial example to test the hypothesis of Asian influence in Central America, and has, we think, established his case.

The Maya civilization flourished in Central America between the fourth and twelfth centuries, but probably reached its highest development towards the end rather than the beginning of that period. The Mayas, as is proved by their buildings and codices, had attained an advanced stage of culture before the arrival of the Spaniards. At Copan, in Honduras, near the frontier of Guatemala, is an imposing collection of ruins of stone pyramids, terraces, and walls enclosing great courtyards. They have been visited at various times during the last eighty years by several travellers and studied with minute care by Mr. A. P. Maudslay during the years 1881 to 1894. His account was published, with numerous fine illustrations, in Godman and Salvin's *Biologia Centrali-Americana* (1889-1902). The ornamentation presents in style and feeling an astonishing resemblance to Indian and Indo-Chinese sculpture. The inference that, in spite of the sundering Pacific, the Maya sculpture was influenced, in fact inspired, by Hindu culture is obvious, but is rejected with vehemence by American ethnologists.

To narrow the issue Professor Elliot Smith has taken a single crucial case, a single stela at Copan bearing a human figure, with features, as he and others have recognized, distinctly of Mongolian type; it is surrounded by many ornaments, and the author lays special stress on one of these ornaments, which is an animal of some sort; he says an elephant, but some have thought a tapir, others a macaw, and others, again—Germans these—a tortoise. The last may be excluded as merely perverse, and nobody seems to believe sincerely in the tapir, so that it lies between the elephant and the macaw. The last we may shrewdly suspect would never have been heard of but for the awkward fact, for the theory of the aboriginal origin of the Central American cult, that there have been no elephants in America since Pleistocene times. About the resemblance of the sculptured beast to an elephant there can be no doubt. One American archaeologist has said that the identification is an exploded idea, but it keeps on reconstituting itself in the mind of everyone who looks on the drawings of the American stela for the first time with an unprejudiced eye.

The general character of the stela, which is 11 ft. 9 in. high, is shown in Fig. 1, a woodcut by Mr. Horace Gerrard from one of Maudslay's drawings. The figure of Mongolian aspect will be recognized in the middle, and at the top corners above its head two carvings of beasts with curving trunks, one of them, as it seems, in the act of culling some leaves. If the reader finds this too great an act of faith let him examine the larger semidiagrammatic drawing (Fig. 2). There in the top corner on either side, but badly broken on one, he will see the carving which Professor Elliot Smith and his English colleagues say is an elephant's head and trunk, carved by an artist who never saw an elephant in life, who mistook eye for nostril, and ear for eye, and replaced the auricle of the ear by a tessellated pattern, and the tusks by a spiral figure like an ammonite. On the head of the beast sits a turbaned mahout with a goad. It would seem to require more than the complacency of Polonius to see in it a kind of parrot—a macaw. The inference is that the Maya artist was working from an imported drawing or

carving that had caught his fancy. There is direct evidence of the sort of carving, a makara, perhaps from Cambodia, with elephant head and curly tusk and all, from which he might have copied, and direct evidence too of how competent he was to delineate a macaw when he wished so to do.

Figs. 3 and 4, from another stela at Copan, are presumably by one and the same artist. Fig. 3 shows the elephant again, with indeed a tusk much more realistic than the spiral ornament in Figs. 1 and 2. Fig. 4 shows the artist's idea of a macaw, and this seems really to clinch the argument and to answer Professor Elliot Smith's crucial question in the way he would desire. We cannot go into the reinforcing argument he draws from the story of the makara, the composite wonder beast with a crocodile's head which developed into the dragon, nor into the way in which the elephant's trunk and tusks appear as ornaments in many places from Greece to Yucatan through many centuries, nor into the matter of the spiral ornament to be seen just behind the elephant's jaws in Figs. 1 and 2. But, as has been said, Professor Elliot Smith seems completely to have achieved the primary aim of his book, which is to establish the proposition that Indian culture was impressed upon Central America and Mexico and played an obtrusive part in shaping the early civilization that grew up in the New World. He holds that, while that civilization is distinctly American, most of its ingredients came across the Pacific from the Old World.

FIGS. 3 AND 4.—From Stela D, at Copan. To demonstrate the contrast in the mode of representation of the macaw and the elephant. By the same sculptor. (Wood engravings by Gerrard, after Maudslay.)

We have not here to consider the relations of Indian culture to Western culture in Egypt and Crete. Indo-China, which as is proved was the chief source of the cultural inheritance of Central America, derived its art from India. Professor Elliot Smith concludes his book by claiming confidently as a demonstrable fact that "the stream of Western culture that was effecting such profound developments in Cambodia during the centuries from the fourth to the twelfth A.D., was not stopped at the Asiatic littoral, but spread to Oceania and America."

As has been implied already, the illustrations are numerous and of unusual quality. With one exception they have been engraved from the originals in the publications indicated directly on to the wood by two young artists, Horace Gerrard and K. Leigh Pemberton. Wood engraving is a virile method, and in skilful hands is well adapted to the illustration of books and periodicals. For this purpose, however, it has been almost wholly replaced by the process block made from a photograph. It would be ungrateful not to admit that scientific publications, and therefore the progress of science, have been greatly helped by the photographic process block. It was, in the first place, far less costly, and wood engraving had fallen into bad ways, the artist making a drawing, but the wood being cut by a craftsman whose methods were often very mechanical. In the second place, it was assumed that for scientific work the photographic block could be better trusted to present the appearances truthfully and free from any bias the human observer might himself have and impart to the artist and engraver. Reliance was placed on the untouched photograph to tell the truth and nothing but the truth. Every photographer now knows that unless the object is properly placed and lighted the photographic lens may give a distorted picture, and that skill is needed to bring out details which, if blurred or faint, must be taken on trust. From the point of scientific accuracy and fullness, therefore, the camera has not all its own way as against the cutting tool, and the latter certainly gives the clearer and crisper line. The truth of this assertion can be judged from the woodcuts in this book, some of which we are able, by Mr. Gerrard's permission, to print here. The exception mentioned at the beginning of this paragraph is the frontispiece. It raises a suspicion that someone at University College, possibly in the Slade School of Art there, has not been quite serious. In this frontispiece we see, safe within the gaping jaws of a ferocious crocodile, the smooth-shaven face of a man regarding with a somewhat petulant expression an Indian elephant, who presents on his benevolent countenance a gentle smile which seems somehow to pervade the whole of his portly person. These things are perhaps an allegory, but if there be any who doubt whether an elephant can smile, let them get this book and be convinced.

THE ROYAL MEDICAL BENEVOLENT FUND.

THE annual report of the Royal Medical Benevolent Fund has been issued as a pamphlet, and we could wish that members of the profession would obtain copies from the office of the Fund, 11, Chandos Street, Cavendish Square, W.1. The Fund is much hampered for want of money, and though the application of no one of the 447 persons who applied was refused, the amount granted was in most cases very inadequate, in spite of the fact that the income showed an increase in 1923 over 1922. There were 153 annuitants (several of them over 80) who received annual payments of, in most cases, £20 or £26. This year it will be possible to add to the number of annuitants and to increase the value of twenty-two of the annuities to £30. The majority of the grants ranged between £10 and £20, less than a quarter being above the larger amount. The Royal Medical Benevolent Fund Guild continues to do admirable work, and in many instances its members are able to render personal service. It is represented on the Committee of Management and on the Case Committee of the Fund, and to it cases for inquiry, or needing help in education, are referred.

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THE ROYAL COMMISSION ON NATIONAL HEALTH INSURANCE.

THE composition of the Royal Commission on National Health Insurance has been announced this week by the Ministry of Health, and the names of the members, together with brief particulars of each, will be found in the SUPPLEMENT.

The terms of reference of the Royal Commission have been previously announced: its members are charged to inquire into the existing scheme of National Health Insurance, and to report what, if any, alterations, extensions, or developments should be made in regard to the scope of that scheme and the administrative, financial, and medical arrangements set up under it. It will be remembered that the late Minister of Health, Sir William Joynson-Hicks, during the negotiations last autumn with the Insurance Acts Committee as to the terms of service of insurance practitioners, promised that an impartial Commission should be appointed to report on and inquire into the whole system under the Insurance Acts. In accordance with another promise the draft terms of reference of the proposed Commission were forwarded by the Ministry of Health to the Insurance Acts Committee. The Committee, in informing the Ministry that it had no objection to this reference, drew attention to the undertaking given by the Minister that so far as the personnel was concerned it would be an impartial Commission. In anticipation that this undertaking would be kept, in spirit and in letter, steps have already been taken to prepare the evidence to be given by the British Medical Association before the Royal Commission.

The first question which members of the medical profession will ask themselves is whether the personnel of the Royal Commission, as now appointed, is to be regarded as impartial: that is, not favouring one party or side more than another—a body of men and women unprejudiced and unbiased in regard to the matters under inquiry. The Royal Commission consists of fourteen members—a large number; too large, in our opinion. Of these fourteen persons one alone, the distinguished President of the Royal College of Physicians of London, is a member of the medical profession. Of Sir Humphry Rolleston's impartiality there can be no question at all, and it may be assumed with confidence that he has no preconceived ideas on the subject, though with one aspect of insurance medical practice he is already familiar, for he was chairman of the Ministry of Health's committee on medical records. Several other members of the Royal Commission will be regarded as equally appropriate to serve on a body of this kind. But of the members of the Commission as a whole the same cannot be said. It contains the names of a number of people directly interested in the matters under inquiry, some of whom have publicly expressed their views on subjects with which they are now called upon to deal judicially. The Commission is overweighted with sectional interests; directly and indirectly, trade unions and kindred institutions have undue representation; and there is a lack of persons with broad views on national health. The Royal Commission is concerned with the relation of an insurance scheme to the public health. The work and functions of the bodies which have been administering or acting under the existing scheme will be passed under review. This will include the work of the central Government departments concerned and their professional advisers, the work and position of local bodies, such as Insurance Committees, the work of the medical profession, and that of approved societies. It is obviously improper that—if the Commission is to be of the impartial character promised—individuals who have been professionally responsible for this work should have a place on the Commission itself. The sound principle upon which Sir Humphry Rolleston has been chosen, as representing medicine in its widest aspect, has not been applied in appointing the Commission as a whole.

It would seem that Mr. Wheatley has failed to grasp a great opportunity, or else he has been singularly unfortunate in his refusals to serve. In these circumstances the medical profession must consider seriously whether its desire to participate in a broad-minded effort to review and possibly recast and extend the scheme of medical services for the community can possibly be fulfilled through a Royal Commission so constituted, and what its attitude should be with regard to the giving of evidence.

COCAINE SUBSTITUTES.

IT is remarkable that synthetic substitutes for natural alkaloids are invariably inferior to them in the essential properties by virtue of which they have come to be used in medicine. The synthetic chemist has not improved upon morphine, strychnine, atropine, quinine, or adrenaline; always the new derivatives are found wanting in some essential property, and almost it appears as if Nature in her biological laboratory had said the last word.

The report of Dr. A. J. Copeland, the Ernest Hart Scholar of the British Medical Association, published in the present issue, seems to support this view as regards cocaine. No single substitute possesses all the useful properties of cocaine, though several exist which possess one or more of them and can be used instead of cocaine for certain specific purposes. For subcutaneous injection novocain is unsurpassed because it is non-irritant and the least toxic of all the synthetic products so far prepared; this is true in spite of the fact that much larger doses of novocain are required than of the other derivatives. Butyn can be used as a substitute for cocaine in the eye, and tutocain perhaps in the nose. Butyn is useless for the nose because of the swelling it induces in the nasal mucous membrane, tutocain for subcutaneous injection because of its irritant properties, and novocain is of little value for surface anaesthesia.

The search for cocaine substitutes began as the result of a long list of accidents following its use: these were no doubt due partly to what is termed idiosyncrasy in the patient and partly to the fact that the alkaloid was employed in unnecessarily strong solutions. Idiosyncrasy of people towards cerebral stimulants is not uncommon; it is, for example, an everyday experience with caffeine, so that it is hardly surprising that a rapid and unexpectedly large absorption of cocaine may in certain people, after a short cerebral stimulation, produce the opposite effect—collapse. This search has received fresh incentive in the last few years because during the war the habit of sniffing cocaine became prevalent in France and

Belgium and extended to England. Administered in this way it acts as a rapid and exhilarating intoxicant, producing excitement and abandon. Before the war the pure cocaine addict was very rare; nearly always the drug was taken as an addition to morphine. The latter-day devotees are not, however, for the most part addicts in the sense in which this term is generally used.

Dr. Copeland lays some stress on the fact that all the substitutes excite to a greater or less degree the motor cortex in the same way as cocaine, and he thinks that their possible employment for addiction or vice may be gauged by determining the facility with which they produce cortical convulsions in lower animals. This conclusion is to be regarded as important, and judged in this way the liability to induce addiction for the four alkaloids cocaine, butyn, tutocain, and novocain is in that order. Many other drugs produce similar convulsions—that is, by direct stimulation of the cortex—but these are not necessarily local anaesthetics, though they may be used for addiction purposes; we may instance picrotoxin (at one time used to fortify beer), absinthe, and nutmeg. It may be noted that our official hypodermic injection of cocaine is a 5 per cent. solution preserved with salicylic acid. It is now recognized that this strength is unnecessary, and we have little doubt that it will be altered in a future edition, and directed to be made preferably without the irritant salicylic acid. The French *Codex* has a solution of cocaine hydrochloride for hypodermic injection, but it is a 1 per cent. solution sterilized by placing the bottle in boiling water for a quarter of an hour.

The improved treatment of disease in modern times has been largely attained by the introduction of new synthetic drugs, active preparations of animal extracts, and a greater knowledge of dietetics. In the first group Britain cannot be said to have taken hitherto any significant part. In this country there are, so far as we are aware, no teams of chemists and medical men working together to obtain new chemical substances possessing certain desired properties, whether these are for the destruction of micro-organisms or the production of some definite physiological effect. None of the cocaine substitutes have been prepared in England. Novocain is German, stovaine French, butyn American, and the newest—tutocain—is the product of the well known Bayer laboratory in Germany. The work of the Ernest Hart Scholar gives us, from the point of view of the laboratory, a comparison of the action of these substances. We hope that more work of this nature, directly useful to and required by the medical profession, will be undertaken in the future, and we may cite the need of some comparative and trustworthy figures on alimentary antiseptics.

THE AMERICAN MEDICAL ASSOCIATION.

THE annual meeting of the American Medical Association, held in Chicago during the week beginning June 9th, seems to have been in every respect a great success. The total number of members who registered was 7,819—the largest number recorded since the meeting in Chicago in 1908, when the total was 6,446. Some 3,000 were present when the President, Dr. William Allen Pusey, gave his address on some of the social problems of medicine, on the evening of Tuesday, June 10th. The sections began their meetings on the following day; they were well attended, and though some of the halls provided seats for as many as 1,200, they were crowded. The House of Delegates, which in its functions corresponds pretty closely with the Representative Body of the British Medical Association, met first on Monday, June 9th, when the secretary, Dr. Olin West, reported that the membership on April 1st, 1924, was 90,056, or 1,537 above the number for the corresponding period last year. The general work of the association during the year was reviewed in a report of the Board of Trustees; it recalled that the President, Dr. Schweinitz, at the meeting in San Francisco last year, advised the association to expend greater energy in post-graduate medical work, and recommended the creation of a bureau on extension of graduate medical education at headquarters, under the direction of the Board of Trustees and the secretary of the association. New quarters have been provided for the chemical laboratory, and through a special committee the association has provided funds for the encouragement of therapeutic research. It has also provided funds, through a committee of scientific research, for original investigations in various directions. The propaganda department has been more active in 1923 than in any previous year, and the medical profession and the general public have shown more interest in its educational work. This work was carried on in various ways and in several directions; publicity was obtained both through the *Journal of the American Medical Association* and through the popular journal *Hygeia*, now published by the association. The two volumes on *Nostrums and Quackery*, it was reported, continued to have a steady sale, and were finding their way into the libraries of schools and colleges. The inexpensive pamphlets published by the department had been kept up to date; they were designed especially for distribution among laymen, and more than one million copies had been issued during the last fifteen years. The report stated that a special reprint was issued during last year dealing with the Abrams cult. The exploitation of Abrams's theories and practice, it was stated, had markedly changed in character. "Whereas, at first, some of the more credulous but reputable members of the medical profession were disposed to give the Abrams theories serious consideration, the present disciples of this cult are to be found among the less reputable of the 'drugless healer' type and the more mercenary members of the medical profession." During the meeting Dr. George H. Simmons was entertained at dinner in honour of his twenty-fifth year as editor of the *Journal* and general manager of the association. Dr. William D. Haggard, professor of surgery in the Vanderbilt University, Nashville, was chosen to be president-elect; he has long been an active member of the American Medical Association, was chairman of the surgical section in 1917, and was a member of the council on medical education from 1910 to 1920. The meeting next year is to be held at Atlantic City.

SOCIETY OF APOTHECARIES.

THE Master and Wardens of the Society of Apothecaries of London gave a dinner on July 8th at Apothecaries Hall in honour of the representatives of the medical profession from the Dominions now in this country. The guests were received in the panelled court room by the Master, Dr. Thomas Wakefield, and the Wardens, Dr. A. D. Brenchley and Dr. T. Vincent Dickinson, and dinner was served in the handsome Livery Hall. To mark the occasion the toast list departed from precedent. The Master, from the chair, proposed the health of the King and that of the guests, and brief speeches were made in reply by representatives from India and the various Dominions. In welcoming the visitors from overseas the Master said that their presence made that evening the most important event in the history of the Society since it received its charter from James I in 1617. He briefly traced the origins and growth of each of the Dominions during the lifetime of the Livery Hall, bringing out very agreeably the contrast between old and new. Dr. Wakefield especially

dwelt on the spirit of fraternity which bound together the medical profession of the British Empire. The responses to the toast were made by Lieut.-Colonel J. W. Grant, I.M.S., on behalf of India; by Dr. T. J. Costello (Alberta) on behalf of Canada; by Dr. T. Taylor Downie (Melbourne) on behalf of Australia; by Dr. Arnold W. Izard (Wellington) on behalf of New Zealand; by Mr. H. Temple Mursell (surgeon to the Johannesburg Hospital) on behalf of South Africa; and by Dr. W. T. Grenfell (Labrador) on behalf of Newfoundland. Each speaker acknowledged the abounding hospitality of this ancient medical corporation, and expressed his pleasure at taking part in a family gathering attended by so many distinguished figures in the medical world of London. Before leaving, every guest received a charming souvenir in the shape of an illustrated reprint from the *Builder* of December 7th, 1917, entitled "The Society of the Art and Mistery of Apothecaries of the City of London." The photographs in this pamphlet give an excellent idea of the interior and exterior of the ancient building in Water Lane, Blackfriars.

MYOPE CLASSES IN CANADA AND DENMARK.

DR. DONALD D. MACDONALD has recently published, in a thesis[1] for which he obtained the degree of Doctor of Pedagogy in the University of Toronto, an account of the method of instructing children with high myopia, familiar in England under the name of "myope classes." Medical inspection has shown that there are many children with such defect of vision that, although able to read school books and therefore not blind, the continuous use of their eyes in this way may increase the defect of sight or possibly cause its loss. He estimates the proportion at about 1 to 1,000 in the larger communities, and at 1 to 500 or even higher in the smaller communities. The number is two or three times as great as the number of blind children in corresponding communities. When these children are drafted into blind schools the teachers find "they have too much sight," and are unsuitable for the training given to totally blind children. Such a child can read Braille with its eyes, and its efforts are divided between two systems of education—the sighted and the blind; the division means an imperfect training in each. Further, their mentality is influenced by constant association with the blind. Dr. Macdonald notes that the movement for the better care and training of children with defective vision began in England. "It dates," he writes, "from the International Congress of School Hygiene held in London in 1907. The movement in England centres about the person of Dr. N. Bishop Harman, the founder of myope classes in London. It is to him in particular that the success of this progressive step in elementary education is largely due. The enthusiasm and inspiration put into the project in England soon made their influence felt in other countries, and in a year or two we find that the United States was adapting the English plan to the needs of American schools." He gives a summary first of the English methods of managing these classes, next of the American methods, and finally of his own experience in Toronto, where there are now three classes, and it is proposed to set up more. Mr. Harman's views are quoted with approval as follows: "(*a*) A suitable system of teaching myopes can be arranged. (*b*) Such classes should never be independent units nor be associated with existing blind schools. (*c*) Success depends almost wholly on the intelligence and initiative of the teachers. (*d*) The training of the children should be general, and not merely technical. (*e*) Classes should be small, with an optimum number of twelve, but never more than twenty. (*f*) There must be a standard of visual acuity of 6/18. (*g*) The children must be under regular individual supervision for the whole of their school life." Dr. Macdonald gives details of the type and vision of children admitted to the Toronto classes, records of progress in work, and a very useful list of class equipment. This would appear to be the first graduation thesis to deal with the subject of myope classes, and the author has done his work well and sympathetically. Dr. Eiler Holm has published recently an account of special schools for children with defective vision in Denmark.[2] The methods used entered Denmark through Germany, after a visit of Dr. Lundsgaard to Germany and France in 1920. On his return to Denmark conferences were held with the authorities and ophthalmic surgeons of Copenhagen, with the result that all children whose vision could not be brought to exceed 6/24 were selected as being adapted for the special education, and those from the blind school whose vision was not below 1/60. In this way 26 children were collected out of a school population of 75,000—a low proportion. Two classes were opened, and Dr. Holm gives an account of the methods of education and of the nature of the eye defect and visual attainments of the children. In one of the classes the causes of the defective vision and the low visual acuity attained would probably have rendered the children better fitted for a blind school where a definite trade training is available. But it is possible that in a country almost wholly agricultural, such as is Denmark, persons with a low visual acuity are able to find employment more easily than in a highly industrial country. Reading is taught with large printed books and the aid of powerful magnifying lenses, but it is added, "The children get comparatively quickly tired of reading, and the teaching is therefore arranged so that the pupils take turns, and have a series of short lessons." Somewhat elaborate and expensive experiments have been made with optical lanterns. Attempts were made to use a reading desk below which is placed a lantern slide apparatus so that the picture is formed on a slab of frosted glass mounted in the table top of the desk. The school possesses an excellent epidiascope, by means of which the pupils are shown pictures drawn in clear lines on a black ground, ordinary pictures being useless. But it is added that instruction by means of lantern pictures is more and more replaced by drawing on the blackboard and simple printed cartoons on the wall. Dr. Holm states that "the pupils like their school very much, and the parents are often heard to express their delight at the happy change brought about in the life of their children with this new school, at which they make much quicker progress than they did under the previous conditions."

[1] *Sight Saving Classes in the Public Schools.* By Donald D. Macdonald, B.A., D.Paed.Toronto, pp. 86.

[2] "Special Schools for Children with Defective Vision in Denmark." By Eiler Holm. *Acta Ophthalmologica*, vol. i, Fasc. 3, 1924, p. 273. Levin and Munksgaard, Copenhagen.

HOUSING DIFFICULTIES IN SMALL TOWNS.

WHEN replying to a question by Mr. Masterman on July 2nd, the Minister of Health refused to consider a suggestion that local authorities might be empowered to build cottages (for which subsidies would be available) of larger floor space than was at present possible, and he backed his refusal by the statement that local authorities in the majority of cases were not utilizing the full powers they have at present. There is little doubt that he was right in his assertion, although it is not always the local authorities who are to blame for the inaction. Especially is this the case in some of the smaller towns and rural districts. Local authorities in these areas have made laudable efforts to improve the housing conditions of the poorer classes, but have found themselves handicapped almost at the outset by what appeared to them to be unnecessary and restrictive regulations of the Ministry, and at a later period, as in the case of the Addison houses, by an entire change of policy, resulting in the sudden abandonment of building schemes which were well on the way towards completion. It is becoming a custom in some quarters to attribute a large portion of the preventable disease known to exist to

unsatisfactory housing conditions. The incidence of tuberculosis and the rate of infant mortality, we are told, would both be reduced if better houses were provided, and in his presidential address to the third English-speaking Conference on Infant Welfare recently held in London Mr. Wheatley, when deploring the high rate of childbirth mortality, referred to the great importance of having "homes in which it would be safe for children to be born." In these circumstances it is hardly a matter for surprise that medical officers of health and others concerned with public health administration view with concern the deplorable housing conditions which exist, and at times get out of patience with what they conceive to be uncalled for delays in effecting reforms. We are led to make this observation by a recent report of Dr. R. Wright, medical officer of health for the town of Trowbridge, and we have reason to know that his strictures could be applied to many other towns and districts in the country. There were, he said, many houses in the town which were totally unfit for habitation by man or by any other animal, and were a disgrace to any self-respecting community. The owners could not obtain possession of them either to demolish them or to repair them. The tenants were not frightened by the issue of a closing order, and still remained in occupation. These conditions must remain until more decent dwellings are provided. Dr. Wright recommended, even as a more or less temporary measure, the erection of a block of wooden huts, and referred to his experience in Salonika after the great fire, when many thousands of persons were housed in this type of building. We are not concerned with the desirability of carrying out this proposal. There are at the present time very many more people living in wooden houses in this country than is usually realized, but whether such dwellings are suited to English habits is a question on which diverse opinions are emphatically expressed. The reply of the Trowbridge District Council to its medical officer of health on his suggestion was that the Ministry of Health would not sanction a loan for the provision of a timbered colony. In the course of discussion on the report it appeared that the council had met with great difficulties in the acquisition of land for housing purposes, while the allocation of £500 a year, equal to a rate of threepence in the pound, for several years is evidence that the members are alive to the need for reform. One conclusion to be drawn from the discussion is that the district council does not appear to have been inactive or apathetic towards schemes tending to housing betterment, and if it will have the further effect of hastening those schemes Dr. Wright will have been quite justified in the forcible expression of his views.

TYPHOID CARRIERS IN ASYLUMS.

CARRIERS of typhoid bacilli are a greater source of danger in institutions such as asylums than they would be in the outside world. This is partly due to the closer contact of individuals in large institutions, and no doubt also to the more slovenly and dirty habits of asylum inmates. Consequently typhoid fever lingers on in some asylums, is hard to eradicate, and has a disappointing way of breaking out once more when it appeared to be well in hand. The difficulties of the problem are dealt with by Dr. William Whitelaw in the fourteenth annual report of the Scottish Western Asylums Research Institute. Two epidemics of typhoid fever occurred in the associated institutions in 1921, and the director of the laboratory remarked in the report for 1922 that since there had been no new cases in the last three months of the year it seemed that the end of the outbreak was in sight. This proved to be true for only one institution: in the case of the other the infection is still present, and new cases of typhoid have begun to occur at the rate of about two or three a month. It was concluded that the infection was being spread by several healthy carriers of typhoid fever. A bacteriological investigation was commenced, and up to the present eleven persons, all female patients, have been identified as chronic carriers of the typhoid microbe. The difficulties of discovering a typhoid carrier are not always appreciated. Two examples will illustrate how thorough the examinaion must be. A woman had typhoid fever in May, 1922, and made a good recovery. Before discharge from isolation her excreta were examined six times at weekly intervals, with negative results. In July, 1923, a year afterwards, in consequence of new cases of typhoid appearing, this patient was examined again, and typhoid bacilli found on several occasions. Thus, in spite of six negative examinations, this woman ultimately proved to be a carrier. Another woman was discovered to be a carrier, and the typhoid bacillus was found in her excreta on seven occasions during September and October, 1922. From October onwards specimens of the excreta of this patient were examined at weekly intervals, but no infecting microbes were found until the end of the following March, when the bacillus was again isolated. This intermittent type of carrier is the most dangerous of all because of the difficulty of discovery. An administrative problem of considerable importance is raised by this experience. Medical and surgical measures cannot be relied on to cure carriers, and all that can be done is to separate the typhoid carriers from the rest of the asylum inmates. In many of the asylums of Scotland typhoid carriers are known to be present, and Dr. Whitelaw suggests that the problem of dealing with these would be much simplified if all these patients could be gathered into one institution. Such a plan would make administration easier and isolation more efficient. The isolation would be less burdensome to the patients. There are grounds for believing that the inmates of an asylum are more prone to become typhoid carriers after an attack of typhoid fever than are the sane.

THOMAS HODGKIN.

THE April instalment of the *Guy's Hospital Reports* contains a welcome historical article on the famous name but little known personality of Thomas Hodgkin by Sir William Hale-White, who describes him as having played the three parts of a scientific physician and morbid anatomist, of a reformer of medical abuses and medical teaching, and of a busy, active philanthropist. In addition to the paper on the disease which bears his name, Hodgkin, in 1827, was "the first to write a proper account, both clinical and pathological, of aortic valvular disease," five years before Sir Dominic Corrigan's celebrated paper in the *Edinburgh Medical and Surgical Journal*, 1832; this seems to have been quite overlooked in spite of Sir Samuel Wilks's efforts to draw attention to it in the *Guy's Hospital Reports* on two occasions. Although, with Bright and Addison, one of its ornaments, Hodgkin was never physician to Guy's Hospital, Benjamin Guy Babington being preferred before him in 1837. These two rivals for that post died in 1866 within three days of one another. In the previous year Hodgkin, like his friends Sir James Clark and Dr. Neil Arnott, declined the Fellowship of the Royal College of Physicians of London from "conscientious motives," the nature of which is not very obvious, unless, perhaps, it was because he belonged to the Society of Friends. In 1822 Hodgkin read a paper to the Guy's Physical Society on the "Application of the stethoscope," soon after his return from Paris, where he had come under the stimulating influence of Laënnec; it would appear that the introduction of the stethoscope in the medical wards at Guy's Hospital was thus largely due to him. After failing to get on the staff at Guy's, he was in 1842 appointed lecturer on the theory and practice of medicine at St. Thomas's Hospital and curator of the museum; but he held this post for a short time only, and Sir William Hale-White observes

that this would appear to have justified Benjamin Harrison Junior, the great treasurer of Guy's Hospital, in his decision to appoint Babington instead of Hodgkin to the medical staff. Hodgkin's scientific mind and industry provided him with excellent material, but he wrote diffusely, and thus his publications failed to become popular. In fact, his fame is largely due to the chivalry of Sir Samuel Wilks, without whose advocacy his name would not be known in connexion with lymphadenoma. His *Lectures on the Morbid Anatomy of the Serous and Mucous Membranes*, which contained 900 pages, and even then was not completed, contains much careful observation and thought, but partly because it was diffuse, and partly from the absence of illustrations, it was never, in popular esteem, a rival to Matthew Baillie's older but more concise work on morbid anatomy. Hodgkin covered a wide field of subjects, including ethnology, and was the founder of the Aborigines Protection Society; it is probable that had he concentrated on medicine he might have been even more distinguished.

GERMANS AT INTERNATIONAL CONFERENCES.

THE June number of the transactions of the Society of German Naturalists and Physicians contains some additional particulars with regard to the eighty-eighth meeting of the society, which is proposed to be held in Innsbruck in September next. The section of surgery, pathology, and neurology will be opened with a discussion on goitre, in which Professors Kraus, Eiselsberg, and Wegelin will take part; and Professor Pommer will introduce the subject of osteoporosis in the section of surgery and pathology. Those who desire to attend the meeting are requested to communicate with Professor Defant, Innsbruck, Schöpfstrasse 41; notices of communications to the sections should be addressed to Professor Steyrer, Innsbruck, Anichstrasse 35, not later than August 20th. The forthcoming meeting of the society has evidently been regarded as affording a suitable opportunity for reviewing the general relations obtaining between German and foreign scientists at the present time. Two articles in the transactions, entitled respectively "The participation of Germany in international congresses" and "A new method of boycotting the Germans," are devoted to this subject; and a long quotation is given from the presidential address of Professor Fritz Haber to the German Chemical Society, dealing with this question. The Germans evidently feel very keenly any attempt to exclude them from international scientific gatherings, and two specific instances are mentioned for the consideration of foreign scientists. The first relates to the conferences on tuberculosis held in Berlin in 1913 and at Paris in 1920. The president, Professor Bourgeois, in his opening address on the first occasion, said: "Let us co-ordinate our researches and combine and centralize our efforts, let us not allow anything to distract or divide us in this battle, for in it, unlike other conflicts, every victory will entail, not the loss, but the saving of many human lives." The complaint is that to the second congress, of which Professor Bourgeois was again president, the Germans were not invited, and that this indicated a lamentable alteration in Professor Bourgeois's attitude. Our comment is that Professor Bourgeois acted, in the circumstances, as any sane human being would have done whose human instincts had not been dried up. The second instance is less easy of justification if the facts are as stated. It is alleged that Germans have been excluded from congresses on several occasions by a trick: invitations would be sent to the Germans in due form, and the date of the congress would then be altered without withdrawing the original invitations. Such a proceeding cannot be approved, but the Germans would, perhaps, have shown more sense of proportion had they abstained from allusion to the circumstance. On the whole, and apart from these two instances, the articles referred to give the impression that the Germans have very little to complain of as regards their reception by foreign scientists.

PREVALENCE OF NOTIFIABLE DISEASES.

THE Health Section of the Secretariat of the League of Nations is now receiving current official reports on notifiable diseases from a considerable number of countries, and the data are published in French and English each month, supplements being issued in special cases when necessary. Although delay in the transmission of information has occurred in some cases, yet through the co-operation of the Ministries of Health and other agencies concerned in the various countries such delay is now being steadily lessened and the value of the reports correspondingly increased. The population of each country is quoted from the latest official reports wherever possible. In the March report, which has just reached us, there is an account of the sharp increase of influenza during the first two months of this year in Western Europe. The greatest prevalence as shown by the current mortality statistics was in the British Isles, where the epidemic appears to have been more severe than during 1923, though the number of deaths attributed to influenza was smaller than during the outbreak of December, 1921, to January, 1922. In Germany and Austria, on the contrary, the incidence of influenza was decidedly lower this year, and no reports so far received have shown any marked epidemic prevalence of influenza in countries outside Europe. The indications are that the maximum of the epidemic has been reached in nearly all the localities so far seriously affected. The heaviest mortality throughout occurred among elderly people. Other places in which an increase of influenza appeared during January and February of this year were Switzerland, Scandinavia, Moscow, and the United States. It is noteworthy that the influenza outbreak in Western Europe coincided with a large increase in the general mortality considerably in excess of the corresponding rates for last year. No such increase had occurred, however, up to the beginning of February in Germany or Austria. There has been a marked increase in diphtheria in Russia since August, and it appears likely that the rate for 1924 will exceed that of any year since 1919, although the prevalence of the disease is far below the pre-war level. In the same country diseases produced or aggravated by malnutrition still occupy a prominent place: during the first eleven months of 1923, 41,913 cases of scurvy were reported, and the incidence of the disease this year is already higher in certain areas than it was in pre-war years. The current reports of the prevalence of notifiable diseases are arranged in tabular form under the different countries.

THE BRISTOL MEDICAL SCHOOL.

THE University of Bristol has appointed Dr. J. A. Nixon to be professor of medicine and director of clinical medicine. By this appointment the medical department is brought into correspondence with the surgical, Mr. Hey Groves having been appointed to corresponding positions in the surgical department two years ago. Bristol, therefore, now has two professors of medicine (Dr. F. H. Edgeworth and Dr. J. A. Nixon) and two professors of surgery (Mr. C. A. Morton and Mr. Hey Groves). By adding to its professorial staff in these two departments the University has followed the example of many others, both at home and abroad. Dr. Nixon, who graduated M.B., B.Ch. at Cambridge in 1900 and M.D. in 1915, is physician to the Bristol Royal Infirmary. He served in France during the greater part of the war, and at the armistice had been for some time consulting physician with the armies. He held the rank of temporary colonel, and received the C.M.G. for his military services.

NINETY-SECOND ANNUAL MEETING

of the

British Medical Association,

BRADFORD, 1924.

PLACES OF INTEREST NEAR BRADFORD.*

BY

JOSEPH HAMBLEY ROWE, M.B., F.S.A., F.S.G., AND B. WADE, L.R.C.P., L.R.C.S.

THORNTON.

THORNTON, with its old-world main street, from which radiate neat modern terraces of artisan dwellings, affords a kind of *multum in parvo* of old traditions and forgotten feuds and of modern toil and financial success.

Leventhorpe Hall, built close to Leventhorpe Fulling Mill, mentioned as in existence in 1311, is a characteristic dwelling of the wealthy landowner of early Tudor days. The family of Leventhorpe was of some consequence, as is indicated by the Leventhorpe Chantry in the Cathedral of Bradford. Ultimately the family gravitated to Hertfordshire. Thornton Hall was the home of the Thorntons, but passed by marriage to the Hortons, one of whom was Dr. Thomas Horton, a commoner of Brasenose and a physician in London, who in 1685 married the daughter of Dr. Watmough and died in 1694.

Close by is the old Bell Chapel, originally built as a chapel of ease. In this place the four younger children of the Rev. Patrick Brontë were baptized. Charlotte was christened on June 29th, 1816, and Emily two years after, on August 20th. Their father had been appointed incumbent of Thornton, and ministered there until his removal to Haworth in February, 1820. The chapel fell into disuse and ruins when the more pretentious church was built in 1872, on the opposite side of the new through road. In the old main road of the village is to be seen the old vicarage, a double-fronted house, the right-hand side of which was many years ago converted into a bay-windowed shop. Here the famous sisters were born. Within the township in its eastern part faint traces may be seen of the Roman road that led from Manchester (Mancunium) to Ilkley (Olicana) and thence by Hampthwaite to Aldborough (Isurium), and along which tramped the sturdy Roman legionaries of a long bygone day.

HAWORTH.

Of Haworth and its associations much has been written, and the output shows no signs of lessening. The home of the Brontës from their early infancy, it attracts an ever-increasing band of pilgrims from all corners of the earth. Two causes appear to be concerned in the steady increase of interest in the Brontës: one is the powerful appeal of their novels, and the other is the moving story of the lives of these gifted sisters. Probably to-day the latter is and henceforth will be the more dominant of these factors. Mrs. Gaskell's *Life of Charlotte Brontë* is a classic among biographies, and is almost as widely read as the novels themselves.

A steep street curving to the right leads up from the banks of the little river Worth to the closely clustered inns, church school, and houses of the heart of Haworth. The Bull's Head Inn, wherein the weak-willed brother wasted so much of his time and talents, first greets us, and the church, with the vicarage, lie behind it. The church of to-day is not the one in which the father ministered. That was pulled down in the eighties to make way for a larger and better appointed structure. All the members of the family save one are buried in the church. Anne, the youngest, lies in the northern side of the churchyard at Scarborough, where she had been taken in the hope that the progress of her disease might be checked. She arrived at No. 2, the Cliff (where now the Grand Hotel is built), on May 25th, 1849, and died on the 28th.

The vicarage lies on the slope of the hill south of the church, and has a dismal and depressing outlook on a multitude of blackened tombstones. It is not quite the same as when the Brontës lived there, a part having been added to the right of the house. Close by are the church schools, in which Charlotte taught, and there are yet living those who remember her in the Sunday school. The Brontë Museum is close by, and holds quite a large number of most interesting relics of the family. The village, the house, and the museum all help one to form a picture of the surroundings under which the family existed, and to understand the atmosphere and local colour of their great novels. A mile and a half away by the banks of a tiny moorland stream, with its little waterfall, is a hollowed rock, known as the Brontë chair, and here in the loneliness of wild nature the sisters used to come and meditate.

Five years after the death of her last surviving sister Charlotte married her father's former curate, the Rev. Arthur Bell Nicholls. Seventy years ago (June 29th, 1854) the marriage took place quietly at Haworth. Her married life was happy but very brief, for she died on March 31st, eight months after. The certificate gives pulmonary tuberculosis as the cause of death, a dread disease from which she along with her sisters and mother had suffered. On June 7th, 1861, the father died in the 85th year of his age, faithfully attended to the last by his son-in-law.

TONG.

Close to the great south road that leads from Bradford, some three or four miles from the centre of the town, lies the pretty village of Tong. Its church, beautifully kept, is comparatively modern, having been built in 1727 on the site of one much older, and it is interesting to note that Nelson, the companion of John Wesley, in his earlier itinerant days, was the mason employed in building it. Tong Hall, built in 1702, in an ancient deer park, is an excellent example of the square-sashed Italian house. Of brick, three stories high, it has a stateliness which attracts one. In it are many specimens of Spanish mahogany and oak furniture in fine condition, and there are good portraits of Charles I, William III, Prince Rupert, General Monk, and the Earl of Newcastle. A bedroom contains an oak suite, all made from trees grown on the estate, and there is carving by Grinling Gibbons in the house.

ILKLEY.

As the crow flies, Ilkley lies nine and a half miles north-north-east of Bradford. By road it is eleven miles, and once past lower Baildon, the route offers pleasant scenic effects, and after reaching the top of Hollings Hill one traverses the lowest point in the watershed between the Aire and the Wharfe, leaving Guiseley with its ancient

* The first article of this series, giving an historical sketch of the city, was published in the BRITISH MEDICAL JOURNAL of December 8th, 1923 (p. 1111). The second article, "Bradford: Yesterday and To-day," appeared on March 22nd, 1924 (p. 541), and a third article, on Bradford medical institutions, appeared on May 31st, 1924 (p. 966).

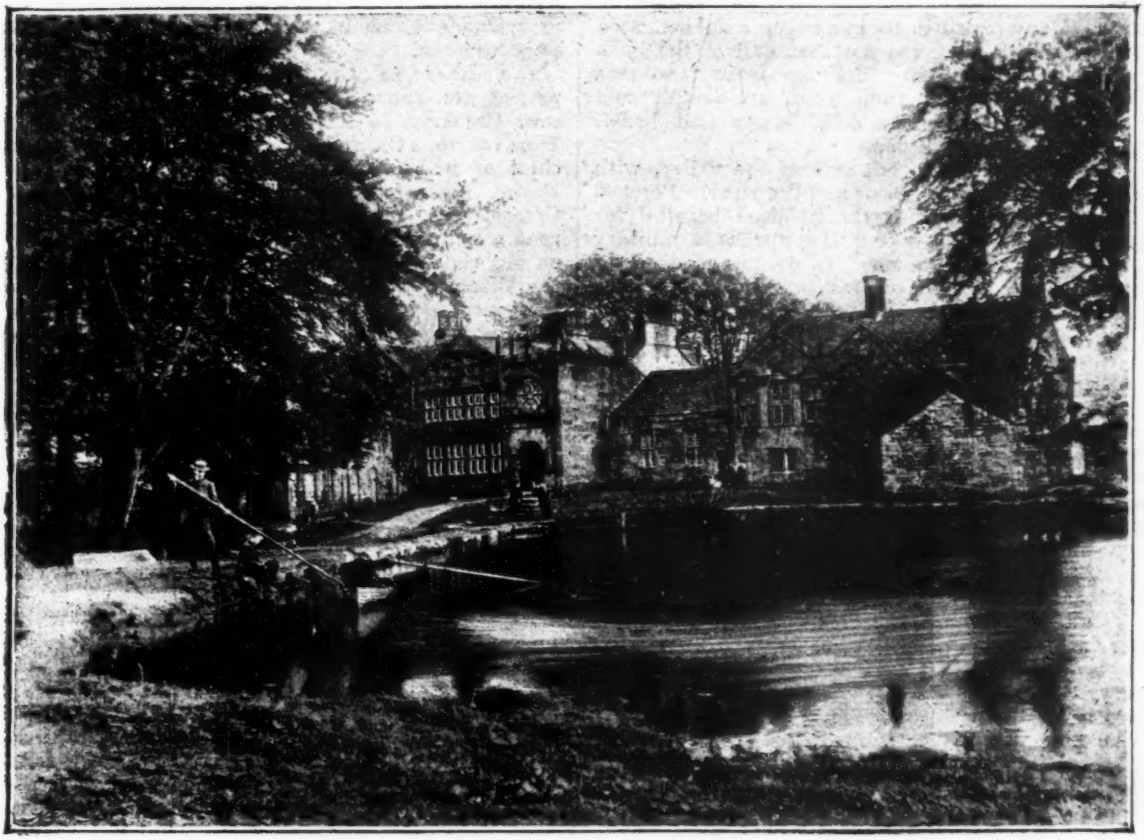


FIG. 1.—Riddlesden Hall, Bingley.

Church of St. Oswald and its pleasant old vicarage to the right. The second considerable turning to the left takes us through Burley-in-Wharfedale, one of the prettiest villages in Yorkshire. A winding road, with glimpses of the beautiful river, takes us past Ben Rhydding into Ilkley.

The fame of Ilkley as a health resort is spreading year by year, and the council which governs its affairs is engaged in work which attracts more and more visitors to enjoy the bracing air which is so notably a supplementary feature to the beauty of the surrounding country. Apart from rambles on the breezy moors north and south of the town and delightful walks along the Wharfe, there is tennis and golf in abundance. Ilkley, however, possesses, in addition, a wealth of historical and prehistoric remains unequalled by any other spa in England. On the moors, within easy walking distance, over thirty different objects of prehistoric interest occur. Ancient enclosures, burial cairns, stone circles, and cup and ring marked stones abound. In regard to the last, there are more of these mysteriously marked stones on these moors than in any other place in England. The council has taken steps to preserve some of them from injury, and a very fine example can be seen railed off near St. Margaret's Church. A very notable rock-marking is that of the so-called Swastika Stone, believed to be the only example of the Swastika in England.

Ilkley has been identified as the ancient Olicana of Roman days. It must have been an important station at the crossing of two great trunk roads. It has long been recognized as the site of a Roman fort, and excavations under the auspices of the Yorkshire Archaeological and Topographical Society within the last few years have fully confirmed this. Many of the finds are housed in the Ilkley Museum, where they may be inspected with advantage.

Ilkley Parish Church stands on the south side of the Roman Camp, and is of ancient foundation. The south porch is early thirteenth century work, but the present building dates mainly from shortly before the Reformation. The Middleton Chapel in it, dedicated to St. Nicholas, was founded in 1474. In the churchyard are three Saxon crosses; the principal cross is 8 ft. 4 in. high, and has on it representations of the four evangelists in symbolical figures—a man for St. Matthew, a lion for St. Mark, a bull for St. Luke, and an eagle for St. John.

BOLTON ABBEY.

Bolton Abbey is, without a doubt, one of the beauty spots of England. Words fail to describe the appeal of its ruins or the charm of its setting. The eye only can appreciate the delicate beauty of the scene.

In 1121 a priory was founded at Embsay, a few miles north-east of Skipton, and in 1151 Adeliza de Rumelli, who had married William Fitz Duncan, nephew of David, King of Scotland, by charter preserved at the Abbey, granted to the canons of Embsay her manor of Bolton. By the banks of the River Wharfe the monks built a stately abbey, wherein for centuries they worshipped. These Augustinian canons were from fifteen to eighteen in number, and at the height of their worldly prosperity it is thought must have enjoyed an income about equal to £15,000 a year in modern money.

The ruins of the Abbey present many features of much architectural interest. There is a very fine early English western front, and the Norman arcading is very much admired. The south transept shows a window which retains some of its beautiful flamboyant tracery. The west tower, of late Perpendicular masonry, begun before the Dissolution, was never finished. There is to be seen, too, the gravestone of John de Clifford, who was made a Knight of the Garter in 1421, and in the following year was killed at the siege of Meaux.

BRADFORD TO LANGSTROTHDALE.

Bradford to Langstrothdale is a matter of thirty odd miles, and the road that leads there is one full of points of interest along its whole length. The first mile out sees us abreast of Lister Park, with the Cartwright Hall in all its architectural dignity dominating the scene. Two miles or so further we pass through Saltaire, a model village built over half a century ago by Sir Titus Salt, by the banks of the Aire, and hence its name. We are soon in Bingley, a town situated on some morainic hills left by the retreating glacier of the Ice Age in a series of

mounds across the valley of the Aire, and well wooded on its outskirts. Many places in its immediate neighbourhood are well worth a visit. At the northern end of the town is the ancient parish church. The new main road cuts across the old churchyard, and from its length and breadth were disinterred some 3,000 skulls and bodies before the macadam was laid down.

Our road now runs on the left side of the valley, with the railway intervening between us and the river. Perched on the hillside to the right is the isolation hospital for Keighley, which was used during the war as a military hospital. On the left of the road, as we come into sight of Keighley, is East Riddlesden Hall, a splendid specimen of the architecture of the Commonwealth period (see Fig. 1).

It was close to East Riddlesden that the Roman road from Manchester through Ilkley to Aldborough crossed the River Aire, and it is on record that a hoard of Roman coins was dug up at Elam in close proximity to the Aire.

Keighley, a considerable manufacturing town, is far from prepossessing, and need not detain us. It is mentioned in the Domesday survey as Chichelai. At Steeton, on the right hand, is to be seen a tall, slender war memorial, one of the most beautiful in the county. Two or three miles bring us in sight of the Lang Kirk of Craven. Kildwick Church contains a number of pre-Norman cross shafts, and a fine recumbent monument in Hazelwood stone of Sir Robert de Stiverton, a contemporary of Edward I. Shortly after leaving Kildwick, Farnhill Hall (see Fig. 2), on a knoll to the right, comes into view; portions of it are of the thirteenth century, and it was probably a peel or fortified structure, so guarded because of the raids of the Scottish border clans in medieval days.

FIG. 2.—Farnhill Hall, Kildwick.

Skipton, the capital of Craven, is a real old market town with a wide space in the centre, wherein, century after century, stalls and booths have been set up every week to supply the large agricultural district of which it is the centre. Overlooking it is Skipton Castle, once the seat of the powerful Cliffords. It is in tolerable preservation, and well worthy of a visit. It was founded by the de Romilles, and subsequently passed by marriage to the des Meschines. Over the portal is carved the single word *DESORMAIS*, a motto the full significance of which is as yet not understood.

The Road to Settle.—At Skipton, after passing the fine old church, there is a forking of the roads; the one to the left takes us through the pretty village of Gargrave, whence in the south distance Pendle Hill is seen to loom up largely. It is the venue of Harrison Ainsworth's story of *The Lancashire Witches*. Further on to the right is Coniston Cold. Thence the road crosses the watershed between the Aire and the Ribble, and passing through Hellifield, with its ancient peel and modern railway junction, makes for Long Preston. Two dangerous corners having been negotiated, the traveller soon comes to the very ancient town of Settle. Divided by the river is Giggleswick, interesting as having a museum, wherein are housed some of the relics found in the famous Victoria Cave. The old church of St. Alkelda has many claims on the ecclesiologist, a statement that also holds good of Giggleswick Chapel, a magnificent piece of architecture, built by the late Walter Morrison, M.P., for his old school, Giggleswick. Not far away is the famous Ebbing and Flowing Well. The rise and fall of the waters is caused by syphonic action in the underground waters of the limestone caverns.

The Road to Langstrothdale.—From Skipton, after passing the church, the right fork of the road takes us over Crookrise to Rylstone, a name familiar to lovers of Wordsworth. On the left is a massive line of fells, the chief of which is Rylstone Fell, marked by a cairn of stones. On a lower ridge are the ruins of Norton Tower. Cracoe, with its quarries of limestone, used largely for road mending, is the next object, and from thence, passing on our right Linton, we proceed to the narrow lowland by the Wharfe, where one road takes us to Grassington, once the centre of a lead-mining industry, now a summer resort, and where the Bradford Corporation has built a sanatorium. The other road turns to the left, up the right bank of the Wharfe, and passing Chapel House, the ancient home of the Tennants, leads to Kilnsey. At the latter hamlet there is on the right a very fine limestone cliff, about 170 ft. high, that seems to overhang the road. To the left, across the river, is Coniston, with its church, probably the oldest ecclesiastical edifice in Craven (Fig. 3). Most of this district belonged to Fountains Abbey, which cultivated a considerable trade in wool from the sheep pastured on Fountains Fell. At the Dissolution these lands came into the possession of the Greshams. Kettlewell is the chief village of Langstrothdale, the uppermost reach of the Wharfe. The valley is a beautiful one, right up to the springs of the Wharfe on Cam Fell. Oughtershaw, Yockenthwaite, Beckermonds, Hubberholme, Starbotton, and Buckden are the quaint names of the hamlets of Langstrothdale, and in the little church of Hubberholme is to be seen one of the very few original rood lofts of England. The iconoclastic spirit of the Puritans failed to reach this remote little kirk, and thus was spared a notable example of the decorative art of our forefathers.

PATELEY BRIDGE AND BRADFORD CORPORATION WATERWORKS.

Large industrial towns demand a very large water supply, not only for the amenities of domestic life, but for the generation of steam power and for the cleansing of raw and manufactured material. To supply this demand cities like Birmingham and Manchester have had to go far afield; the latter, indeed, has appropriated one or two of the Westmorland lakes. Bradford, owing to its proximity to the Yorkshire Dales, is more fortunate in that respect, and draws its main supplies from tributaries and headwaters of the Wharfe and Nidd.

The largest reservoir is situated in the upper reaches of the Nidd, and a journey to see the huge inland lake is well worth making, for the country traversed is some of the most beautiful in England. Alternating riverine, moorland, and sylvan prospects charm the eye and produce the keenest pleasure. The road to Otley must be taken and various points of interest are passed. Just past where the road for Ilkley branches off to the left we cross at right angles the site of the ancient Roman way that led from Ribchester through Skipton to Ilkley, and thence under our feet away to the right making for Tadcaster. On the right the long escarpment called the Chevin makes a marked feature in the landscape. From Otley, formerly a manor of the Archbishop of York, a steadily rising road takes us through

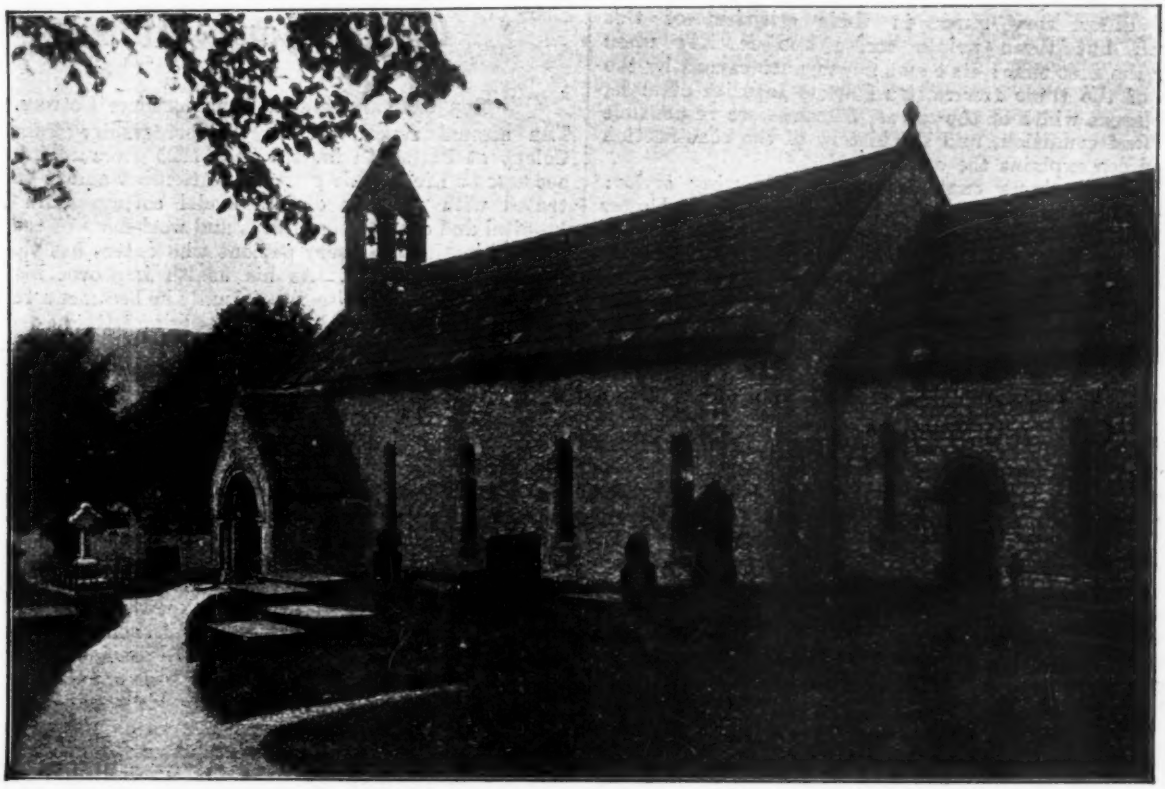


FIG. 3.—Coniston Church.

Huby, Weeton, and Pannal to the bridge across the Crimple Beck up steep Humphry Bank into Harrogate. Crossing the river at Nidd Bridge, the road due north leads through Ripley. On the left is Ripley Castle, which Cromwell besieged. Bearing to the left, a good view is obtained of the beautiful country on the right bank of the Nidd. Hampsthwaite, the ancestral home of William Thackeray, nestles amongst the trees, and Birstwith church steeple peeps out of the foliage. Beverley Hall is also to be seen with its garden. Pateley is soon reached, a quaint old market town of the Dales, with its one narrow steep street leading down to the bridge. Across the bridge and straight on is the famous Greenhow hill road, where the gradient is in places 1 in 3 and in others 1 in 4—a thousand feet rise in three miles.

To reach the reservoirs one here takes the train, owned and run by the Corporation of Bradford. As the train runs along the single line the farms get fewer and the moorland gradually ventures nearer and nearer to the river. The little chapelry of Ramsgill, the birthplace of Eugene Aram, is passed with its comfortable old inn, beloved of the angler. Then comes Lofthouse and further up Middlesmoor, with its church dedicated to St. Chad, situated on the ridge which divides the Nidd from its first big tributary, the How Stone Beck. The Nidd derives its pure waters mainly from Great Whernside (2,246 ft.) and Little Whernside (1,984 ft.).

KNARESBOROUGH.

A favourite excursion resort, Knaresborough, on the banks of the Nidd, offers ample attractions to the lover of the historic, the curious, and the beautiful. Its ruined castle, once the seat of powerful barons who held sway over large territories, its fine old church, St. Robert's Cave, the Dripping Well, which encrusts any object placed in it with carbonate of lime, the beautiful views on the river, all serve to make a visit very pleasant indeed.

ALDBOROUGH.

This village is one of the centre spots of Roman interest in England. Identified as the Isurium of the ancient itineraries, it has yielded up many most interesting evidences of Roman occupation from time to time. Most of the finds have happily found an abiding place in the local museum, where they may be inspected at leisure. Not far away, but nearer Boroughbridge, are the Devil's Arrows, huge monoliths whose origin and use are shrouded in the mists of antiquity.

TEMPLE NEWSAM.

Within three miles of Leeds stands the noble mansion of Temple Newsam. Given to Ibert de Laci, Lord of Bois l'Evêque, before the Conquest, and owner of the Honour of Pontefract after, it passed to the de Viliers, by whom it was given to the Knights Templars about the end of the twelfth century. The decree which declared the Order of Knights Templars to be for ever abolished in England was promulgated by Archbishop Greenfield from Cawood (an old town on the Aire but a few miles away), on August 14th, 1312. Thereafter the Crown took possession of Temple Newsam for a while, and after various other owners the Darcys held it until Lord Darcy was beheaded on Tower Hill in 1537. Temple Newsam was then given to Mathew Stuart, fourth Earl of Lennox, and Regent of Scotland in 1570. This earl married Margaret, daughter of Margaret Tudor and niece of Henry VIII. Thus it came about that in 1545 their son Lord Darnley, afterwards the husband of Mary Queen of Scots, was born within its walls. Following the example of Bradford in their purchase of Bolling Hall, the City Fathers of Leeds acquired Temple Newsam recently at a very moderate figure, and with its beautiful old furniture undisturbed it forms to-day a pleasure resort for the people of Leeds of a most attractively educative type.

RIPON.

Ripon, from many points of view, is full of interest. In the centre of the market square is the market cross, which was erected in 1781, and the town hall occupies the centre of the south side of the square. The ancient house with projecting gable is said to have been the original town hall.

The principal object of interest in Ripon is the Minster. Experts differ very much in their criticism of this cathedral, but three points strike one forcibly when seen for the first time: its squat appearance caused by the lowness of the three towers, its marked severity of style, and the great width of the nave. Storms were responsible for the first condition, and the history of the construction of the edifice explains the other points.

The Minster shows examples of the following styles: *Saxon*—Wilfred's crypt; *Norman*—portion of chapter house and crypt; *Transitional*—transepts; early English—west front and western tower, vaulting and circular windows of chapter house; *Decorated*—two bays of choir; *Perpendicular*—south and east sides of central tower; east side of main wall of transept; choir screen; two bays south side of choir; nave. Wilfred's crypt is a relic of the first age of Christianity in Yorkshire. A long narrow passage leads to a vaulted cell in every wall of which is a niche. One of the distinguishing features of the cathedral is the wide nave, which is only surpassed by three Gothic cathedrals in England—York, Chichester, and Winchester. The transept is of exceptional interest, being the most characteristic example of the work of Archbishop Roger. The north arm presents very nearly the same appearance as it would when completed by the builders more than seven centuries ago, but the south arm is not so interesting, being late Perpendicular (1459). The choir is of admirable proportions, consisting of six bays with north and south aisles, and notice should be taken of the exquisite carving of the series of choir stalls (period 1489-1494). The bishop's throne is at the eastern end of the south range, and the dean's stall is on the right of the entrance. There is also a stall for the canon in residence and one for the mayor, and adjoining stalls for the city council. Externally the cathedral is beautifully situated on an eminence at a short distance from the confluence of the Ure and Skell rivers.

STUDLEY ROYAL.

Studley Royal and Fountains Abbey present a series of pictures unparalleled in this and probably in any other country. Studley Royal is situate on the border of the "Vale of York," and is elevated so as to comprise views of this broad plain and of the Hambleton Hills. A great variety of timber is a striking feature of the well wooded park, and in the centre of the main avenue drives meet, forming what is known as "The Cocked Hat." At the north-west corner of the park is the hall, which is not open to the public. The landscape artist has harnessed the waters of the tiny river; small cascades have been formed, finally entering a beautiful circular lake placed amongst the most perfect scenery imaginable. The view known as "The Surprise" must not be missed, giving a picture which, in the opinion of good judges, is not surpassed in the world. Proceeding down the beautiful avenue of beech trees, the Church of St. Mary the Virgin, on an elevated position in the park, should be noted. We eventually arrive at the ruins of Fountains.

FOUNTAINS ABBEY.

This beautiful relic of former days is, like many other abbeys in this country, of Cistercian origin, being the fourth founded in England. Its exquisite setting, its size, and its presentment of some of the finest examples of monastic architecture, are its distinguishing features. From whatever point the Abbey is approached one is struck by its beauty. Founded about 1132, its erection was due to the ferment which was then present in the Benedictine Order. This discord was marked in the Abbey of St. Mary of York, and Serlo, an early monk of the Abbey, has chronicled how Fountains originated owing to the differences of opinion among the monks at York. An adequate appreciation of the ruins can only be obtained by consulting treatises on the subject, and it must suffice here only to mention the chief points of interest: Strangers' house, buttery, cellarium, refectory, cloister court, nave, transept, choir, chapel of nine altars, chapter house, greater house, base court, cloister passage, great hall, storehouse, chapel, kitchen. Before leaving, Fountains Hall, a fine example of Jacobean architecture, should be seen.

England and Wales.

THE CAMBRIDGESHIRE TUBERCULOSIS COLONY.

THE annual report of the Cambridgeshire Tuberculosis Colony at Papworth for the year 1923 gives an interesting account of life in this growing settlement and is well illustrated with pictures of the model cottages and hostels, hospital and chalets, and farms and workshops of the colony. In this institution every patient who enters has the opportunity of promotion. As his health improves his liberty increases, his wages rise, until finally he becomes a full wage-earner, paying for his board and lodging without assistance. This equality of opportunity is a great stimulus, for, as the ex-patient's skill increases, he has the opportunity to gain both financially and in status in his particular industry. The management of the industries is in the hands of ex-patients, and there are no highly paid fit men acting as officials in the industries. Dr. Varrier-Jones, the medical director, believes this to be one of the secrets of the success of the colony: "encouragement is a practical form of that abundant hope which is so characteristic of the consumptive."

A principle which governs the policy of this tuberculosis colony is that the unit to be dealt with is the family and not the individual alone. Money and time are wasted when the consumptive wage-earner alone is considered; these are saved when the family is dealt with as a unit because the individual members of the family grow resistant to the disease and escape becoming a charge on public funds for treatment. The children in the colony number 70; they are examined week by week and month by month, and hitherto not a single case of tuberculosis has been discovered amongst them. This is a most gratifying and exceptional result considering the frequency with which consumptive parents hand on the infection to their children in the conditions which prevail in large towns. During the eight years in which the colony has been in existence only one death has occurred amongst the settlers. The number of patients is steadily increasing; in the first six months of 1923 the average was 159, and in the second six months it rose to 182.

The annual report reviews the activities of the colony under the headings medical, economic, and social. Medical work includes routine clinical and laboratory examinations. As far as possible the patients' capacity for work, their "vocational therapy," is assessed on their response to effort and not merely by physical signs discovered with a stethoscope. A research has been commenced to test the value of Professor Dreyer's T.B. antigen; of this it is too soon to speak. The various economic activities of the colony cover a wide field. There is a building department, a carpentry and joinery department, a poultry farm, a printing press, a horticulture section, a busy department for signwriting and window tickets, a cabinet making and upholstering department, a portmanteau and attaché case factory, and sections for boot making and repairing and tailoring. Patients are drafted to these various occupations according to their physical capacity and the demand in the particular trades for which they are suitable. The flourishing state of business is illustrated by the fact that in the portmanteau department alone the turnover for the year amounted to £4,597. The social life of the residents is not neglected: sports clubs (including tennis, cricket, and golf), amateur dramatic and horticultural societies, boy scouts, educational and religious activities all have their own workers, secretaries, and committees. Bed-ridden patients listen-in to concerts broadcast from London.

The most notable addition to the buildings of the colony has been the Sims Woodhead Memorial Institute for Research. We gave an account of the opening of this institute (May 17th, 1924, p. 879) by the Hon. Sir Arthur Stanley, and reported the eloquent tribute paid by Sir Clifford Allbutt to the memory of Sir German Sims Woodhead, Professor of Pathology at Cambridge, after whom the institute is named. The general accommodation of the settlement has been increased during the year by

the purchase of twenty-eight cottages previously built by the county council, and by the opening of a hostel with accommodation for eighteen women.

London Spectacles Committee.

The third annual report of the London Central Spectacles Committee, which is affiliated to the Invalid Children's Aid Association, shows the progress there has been in the provision of spectacles for school children. The Committee has organized a series of local committees, which have collected funds for the purchase of spectacles in needy cases or for the loan of the money in others. The report shows that there was a steady improvement in the work during 1923. A higher percentage of glasses ordered has been obtained, and more local committees have been able to work without a grant or with smaller grants. During the year 23,577 spectacles were ordered, and 21,357 are known to have been obtained. This is 90.5 per cent., or 3.5 per cent. higher than last year. Self-supporting districts have increased from seven to ten. Loans on the whole are being well repaid, though one committee reports, "The cancellations of bad debts have increased, but this was to be expected in this year of unemployment." In spite of unemployment the experience for the whole of London has gone the other way, and parents' payments have been well maintained. There are cases in which parents refuse to obtain glasses for their children even after they have been prescribed, but on the whole the parents appear to realize now that glasses are only ordered where they are really necessary, and that if they have their child's welfare at heart glasses must be obtained as soon as possible. The price of spectacles has now been reduced by all the opticians supplying glasses to the centres and hospitals under the London County Council scheme. One singular effect of a local fund for spectacles is reported. The girls in one school raised money for the fund by lending Sacker combs to their school-fellows. Two results followed: the spectacle fund was advantaged, and the subsequent visit of the school nurse showed that the children's heads had benefited.

Scotland.

Chair of Medical Pediatrics in Glasgow.

At a meeting of the curators of the Samson Gemmell Chair of Medical Pediatrics (Diseases of Children) held at Glasgow University on July 2nd, it was decided to appoint as the first professor of this newly established chair Dr. Leonard Findlay. Dr. Findlay took the degree of M.B. at Glasgow in 1900, that of M.D. in 1904, and that of D.Sc. in 1912; in 1914 he was admitted a Fellow of the Royal Faculty of Physicians and Surgeons, Glasgow. He is physician to the Royal Hospital for Sick Children, and since 1919 has held the University lectureship in diseases of infancy and childhood.

Christison Chair of Therapeutics, Edinburgh.

Owing to the resignation of Dr. Jonathan C. Meakins, who has been appointed Professor of Medicine and Director of the Medical School at McGill University, and physician-in-chief of the Royal Victoria Hospital in Montreal, there is a vacancy in the Christison Chair of Therapeutics in Edinburgh. Full particulars can be obtained from Mr. William Wilson, secretary to the University of Edinburgh.

Meat Inspection.

The Scottish Board of Health has issued to local authorities in Scotland revised regulations, which come into force on August 1st, dealing with the inspection of meat and kindred matters. The object of the regulations is to protect consumers from diseased or unsound meat. In a covering circular the Board explains that the new regulations ("The Public Health (Meat) Regulations (Scotland), 1924") cover practically the same scope as the Meat Inspection Regulations issued in April, 1923, with some adjustments designed to improve the machinery of administration and with some additions. Among the matters the machinery for dealing with which has been adjusted are the inspection of the carcasses of animals slaughtered because of accident or for other emergency reasons, and the hawking of meat and meat food products from carts or other vehicles, or from barrows, baskets, booths, or stances; among the new provisions is one prohibiting the hanging of carcasses intended for purposes of food in stables and similar places, the carrying on of a butcher's business in premises used as living accommodation, and the storing of meat intended for sale in living and sleeping rooms. Copies of the regulations can be obtained from H.M. Sationery Office, 120, George Street, Edinburgh, price 4d.

Lethargic Encephalitis in Glasgow.

Since the outbreak of lethargic encephalitis in Glasgow began in April, there have been in all, to the end of June, 313 cases, with a mortality of 24. During last week the number of cases under treatment was 203, while in the previous week the total was 200.

Ireland.

Medical Registration in the Irish Free State.

Speaking after the ceremony of enrolment of licentiates Mr. R. C. B. Maunsell, President of the Royal College of Surgeons in Ireland, said:

I regret that the Council of the College is at present very uneasy about the future. Difficulties have arisen as to the validity of the registration of doctors in the Free State since the date of signature of the Treaty. Previous to that date any man or woman who passed the qualifying examination in Ireland had the right to be enrolled on the *Medical Register* of Great Britain and Ireland, and had the right to practise his or her profession in Ireland, England, Scotland, Wales, or the Colonies and Dominions, and in other countries with whom reciprocal relations existed. Since the signing of the Treaty they no longer have this right. This is particularly hard and unfair to students who commenced their studies under the old conditions, and who naturally expected to be placed on the *Register* without question. In order to restore this right it would be necessary for the British Parliament to pass an Act which would permit the General Medical Council to register our licentiates as heretofore, but the British Parliament cannot do this unless the Free State Dail request that it be done, otherwise Britain would be interfering, without permission, in a Free State concern. I would not wish you to think that the council of your College and the councils of the other licensing bodies have been neglecting this vital matter. Several months ago the Free State Government requested all the qualifying bodies within its bounds to report on the advisability or otherwise of setting up a separate Medical Register for the Free State. Three representatives from each qualifying body were appointed to meet as a General Committee to advise the Government. After many meetings and a most exhaustive consideration of the various issues, that committee unanimously advised the Free State Government to allow us to remain on the existing *Medical Register*, and pointed out that a separate Register for the Free State would mean the ruin of our medical schools and the ultimate deterioration of our profession, as admission to that Register would only enable a man or woman to practise in the Free State; he or she would not be able to practise in the six counties nor in any other part of the British Empire. Some weeks ago the committee was received, as a deputation, by a Minister of our Government, who discussed the question with us thoroughly and most sympathetically, and promised to submit our views to the Executive Council. Since then we have heard nothing, although we pointed out the great urgency and vital interest of the matter to the future of our medical practitioners and to the health of the country. The only people who are opposed to the last arrangement are those who, I think, have not fully studied the facts of the case. As far as I can discern, they have two main objections to the recommendation of the Committee: (1) it would be undignified to ask a favour of the British Parliament; (2) it would be contrary to the rights of a citizen of the Free State to be judged by the General Medical Council.

This latter objection refers to the penal powers of the General Medical Council, which are necessary for the removal of undesirable members of the medical profession from the *Register*. Neither of these objections can be sustained if examined calmly. The first objection is met by the fact that the Free State has not to ask a favour, but to assert a right, as at present the British Parliament cannot authorize the General Medical Council to register our licentiates unless the Dail asks them to do so—in other words, gives its permission. The second objection is met by the fact that eight members

of the General Medical Council would be Irishmen; that cases of misdemeanour are considered by the Penal Cases Committee of the General Medical Council, and that no case from Ireland has ever been considered by the Penal Cases Committee unless it has been considered and reported on by the Irish representative on the Penal Cases Committee. Surely this should be safeguard enough to ensure fair play to our licentiates? Furthermore, can anyone point to a case where an injustice has been done?

I mention these matters to you in order that you may see that the governing bodies of the several medical schools have not been neglecting their duty to their students, and also, remembering the fable of the mouse and the lion, in the hope that some of you may know members of the Dail and may be able to bring home to them the urgency of the whole question.

THE COMMITTEE ON HEALTH INSURANCE AND THE MEDICAL SERVICES IN THE FREE STATE.

The Committee of Inquiry on Health Insurance and the Medical Services in the Free State has held several meetings, at which the procedure of the Committee was agreed upon. Professor W. Magennis, T.D. (National University), has been appointed chairman. Dr. R. J. Rowlette, F.R.C.P.I., nominated by the Irish Medical Committee, has been appointed by the Government as representative of the Irish medical profession; Sir Joseph Glynn and Dr. W. J. Maguire represent the Insurance Commission, and the Local Government is represented by Dr. E. J. Stephenson and Mr. J. Thurston. The following are the Committee's terms of reference:

(1) To inquire into and report on the advisability of the continued maintenance of the system of National Health Insurance in its present form and to make any recommendations which the Committee consider proper in that connexion.

(2) To consider whether it is desirable to institute a system of medical treatment on a contributory basis and, if so, to advise as to the form which such system should take.

(3) To examine into and report on the question whether the medical services at present assisted or maintained out of State or local funds can be improved as respects efficiency and economy and, if so, in what manner, due regard being had to any recommendations made under the preceding paragraph.

BEIT MEMORIAL FELLOWSHIPS.

THE annual report presented to the Beit Memorial Trustees by the honorary secretary, Sir James K. Fowler, M.D., records that the classification of the fellowships into junior, fourth year, and senior, with progressive emoluments, came into force in July, 1923, when the first senior fellow was elected. In addition to the senior fellow the work of research under this trust has been carried on during the past year by one fourth year fellow and twenty junior fellows. On the advice of the advisory board the junior fellowships not now expired have been renewed for a further period of one year. Dr. Louis Gross, having transferred his research to the Board of Health Laboratories of the State of New York, resigned his fellowship. Two junior fellows, Dr. Robert K. Cannan and Miss Ethel M. Luce, who had applied for an extension of their fellowships for a fourth year, have since withdrawn their applications on their appointment to Rockefeller Travelling Scholarships. Dr. T. R. Elliott, F.R.S., Director of the Medical Unit, University College Hospital, who has served on the advisory board of the fellowships, has been appointed assistant honorary secretary to the trustees.

Election to Fellowships.

The trustees have elected H. Davenport Kay to a fourth year fellowship, value £400 per annum; and have elected the following to junior scholarships, each of the value of £350 per annum:

Alan Sterling Parkes, B.A., Ph.D., Sharpey Scholar in Physiology, University College, London, who is engaged in research on the factors governing the proportion of the sexes in mammals, by zoological methods of breeding experiments and observation, and by methods of experimental interference.

Henry Cohen, M.D., Samuels Research Scholar in Clinical Medicine, Liverpool, who is engaged on studies on the chemical composition of cerebro-spinal fluid, in the Biochemical Department of the University of Liverpool.

Honor Bridget Fell, B.Sc., who proposes to undertake an experimental study of the nature of tumour growth at the Research Hospital, Cambridge, by the cultivation *in vitro* of cartilage, choroid, skin, intestine, and other tissues.

Margaret Averil Boas, B.Sc., Grocers' Company Research Scholar at the Lister Institute of Preventive Medicine, who is investigating the action of antirachitic vitamin in diet, and of light radiation in promoting retention of calcium and phosphorus by means of metabolic experiments with young growing rats.

Henry Francis Holden, M.A., a research worker in the School of Biochemistry, Cambridge, who proposes to study the optically active substances, other than glucose, in normal and diabetic protein-free blood filtrates.

ROCKEFELLER MEDICAL FELLOWSHIPS.

THE Medical Research Council announces that it has awarded Rockefeller Medical Fellowships, tenable in the United States of America during the academic year 1924-25, to the following:

Robert Keith Cannan, M.Sc.Lond., Senior Assistant in Biochemistry, University College, London.

John Josias Conybeare, D.M.Oxon., M.R.C.P.Lond., Assistant Physician and Warden of the College at Guy's Hospital, London.

James Rognvald Learmonth, M.B., Ch.B.Glas., Assistant to the Professor of Surgery, Anderson College of Medicine, Glasgow.

Ethel Marjory Luce, M.D.T.C.Dub., Lister Institute of Preventive Medicine, London.

John William McNee, D.S.O., D.Sc., M.D.Glas., M.R.C.P.Lond., Senior Assistant in the Medical Unit, University College Hospital, London.

William Robson, B.Sc.Lond., Chemical Assistant in the Department of Therapeutics, University of Edinburgh.

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT.]

Scottish Board of Health.

ON the vote for the Scottish Board of Health Mr. James Stewart, Parliamentary Under Secretary for Health (Scotland), reviewed the work of the year 1923, which was the healthiest on record. The general death rate fell to 12.9 per 1,000; the lowest previous rate was 13.6, in 1921. The result was the more satisfactory when account was taken of the long-continued period of unemployment and accompanying distress on an unparalleled scale. The Government had removed the embargo on the development of health services, and local authorities had responded by submitting developments and extensions of schemes. A bill dealing with smoke abatement in Scotland would be introduced at an early date. There was increasing evidence that the shortage of hospital accommodation in Scotland was a serious gap in protective organization against disease, and that steps must be taken to repair it by the provision of further hospital accommodation, and by securing closer co-operation between voluntary hospitals and the Poor Law and public health hospitals. Ground was being gained in the fight with tuberculosis. In 1914 the deaths due to the various forms numbered 7,696; in 1923 they had fallen to 5,786. In 1894 the death rate in Scotland from pulmonary tuberculosis was 172 per 100,000 of population; in 1914 the rate had fallen to 104, and in 1923 to 81. It was now less than half what it was thirty years ago, and had been reduced by 22 per cent. since 1914. In the same period the death rate from non-pulmonary tuberculosis had fallen from 63 per 100,000 of the population in 1894 to 58 in 1914 and 36 in 1923, but Scotland still occupied the unenviable position of having the highest death rate of any of the three countries from non-pulmonary tuberculosis. In 1918, at the close of the war, the number of sanatorium and hospital beds reserved for the treatment of tuberculosis was 2,590. To-day there were 3,953, and when extensions, particularly in connexion with Glasgow, were completed, the number would be over 4,800. The deaths of children under one year numbered 80,825, which was equivalent to a death rate of 78.9 per 1,000 births. This was the lowest infantile death rate ever recorded for Scotland. The deaths for 1923 among children over 1 year and under 5 numbered 4,926, or 12.3 per 1,000. This was the lowest on record for Scotland, but considerably higher than the rate for England. In 1915 the number of infants who died under 1 year of age was 14,441, equivalent to a death rate of 126.5 per 1,000 births, and the number of children between 1 year and 5 who died was 9,120, equivalent to a death rate of 22.5 per 1,000. Unfortunately, while the process of reducing mortality amongst infants and children had been continuous, it had been far from steady. In the first quarter of 1924 the infantile mortality rate in Scotland rose to 132 per 1,000 births, against 98 for the corresponding quarter in 1923. In large measure, this high mortality was due to widespread epidemics of measles and whooping-cough, and to the other diseases, such as pneumonia, which followed these infections. A sum of £10,000 had been set aside as part of the maternity and child welfare grant to be distributed so as to encourage local authorities to take further measures for the preservation of children from the ravages of these diseases. Mr. Stewart referred to four wards in Glasgow—the Dalmarnock Ward, with a density of 147 to the acre; the Mile End Ward, with a density of 140; the Kelvinside Ward, with 19; and the Whiteinch Ward, with 23. In 1923 the deaths from measles per million of these children were 1,118 in Dalmarnock; 1,173 in Mile End; in Kelvinside, where the children got a decent opportunity for life, there were no cases; and in Whiteinch, partly industrial and partly well-to-do, the rate was 104. A special inquiry in 1908 revealed that measles was a poverty disease—that the death rate in one-roomed houses from it was 92; in two-roomed houses it was 46; in three-roomed houses it was not

much more than half that (25); and in four-roomed houses and over it was down to 15. His department proposed to make the disease notifiable, appoint a special staff of visiting nurses for infectious diseases, increase hospital facilities, and increase the service of health visitors. Mr. Stewart then referred to the report of the Committee on puerperal morbidity and mortality, a full account of which was given in our issue of May 31st (p. 961) On the development of maternity service and child welfare schemes otherwise, no restriction would be placed, provided that the Board of Health was satisfied with the proposals on their merits. The rationing scheme for calculating grant on food and milk expenditure had now been withdrawn, and grant was paid at the full rate of 10s. per £ on expenditure, supported by the certificate of a responsible medical officer that he considered, after examination, that additional nourishment was necessary for the maintenance of health.

The opening up of new centres for treatment of venereal diseases was proceeding steadily. It was disquieting to find that no fewer than 53 per cent. of patients discontinued treatment without the sanction of their medical officer. This made it necessary to consider whether local authorities did not require further powers.

After mentioning that there had been an increase in lethargic encephalitis, and that it had been impossible to trace any source of infection, Mr. Stewart said that during 1923 and the current year a number of cases of infective jaundice had occurred in East and Mid Lothian. The majority of those affected were miners, and all were in the neighbourhood of two contiguous pits. There had been fifteen cases, with four deaths. The disease was associated with a disease of rats, due to the same organism, and though it had not been definitely settled how the disease was conveyed from rat to man, it was necessary that these animals should, as far as possible, be trapped and killed. Steps had been taken in this matter. The need for investigation of the disease had been put before the Medical Research Department, and had now been referred to the Mines Department.

Dr. W. E. Elliot said the fact which stood out was that in the fourth winter of unemployment the health of the people of Scotland had been better than ever before. It appeared that the figures of sickness benefit paid by insurance societies would show a slight decrease, and so add encouragement. The immediate problem in Scotland was that of infantile mortality. The grant of £10,000 from the Treasury towards the campaign against measles was made by the late Government last year. He asked what had been done to bring into practice the recommendations of the report of the committee on maternal mortality. Scotland was in a better position as to hospitals than England; there was a smaller deficit and a greater provision of beds. But it was desirable that there should not be two inquiries, one in Edinburgh and another in London, with divergent reports, and leading to a holding up of action while these reports were made to correspond.

Mr. R. Spence thought that the previous speakers were wrong in giving the impression that the improvement in the health of Scotland was due entirely to legislative procedure or administrative measures. He attributed it rather to the awakened social conscience of the general community towards health. Mr. Spence was still speaking when the debate was automatically adjourned at 11 o'clock.

Legacy and Succession Duty on Hospital Bequests.

In Committee on the Finance Bill on July 2nd, Viscount Ednam moved that legacy and succession duty should not be leviable on testamentary bequests made to hospitals carried on in the public interests. The British Hospitals Association had asked him to renew the appeal he made last year for this comparatively small concession. He knew that the Chancellor of the Exchequer was personally in favour of it, as were also the Prime Minister and the Financial Secretary to the Treasury, because to the best of his memory they voted for it on the previous occasion. The financial position of the voluntary hospitals of Great Britain remained extremely critical. The total debt upon them last year amounted to £700,000; in the London area alone it was £171,000. He had been informed by the King Edward Hospital Fund, which controlled the finances of hospitals in the London district, and by the British Red Cross Society, which controlled those hospitals outside, that although unable yet to arrive at the total figure for this last financial year, they could say that the total indebtness has not been reduced since last year. The whole vexed question of voluntary versus state-controlled hospitals was germane to the debate, but he was not going to raise it. He contented himself with reading the statement made in the report of the Cave Commission on voluntary hospitals (1920), of which the present Postmaster-General was a member. The commission made thirteen recommendations, most of which had now been carried out, but one was the proposal he was now submitting. At the present time the hospitals with the largest debts were the young institutions that had not been able to accumulate so large an amount of bequests and legacies as the old ones. The Royal Northern, of which he was chairman, afforded an illustration. The expenditure during the last two years amounted to £80,000 a year, but the sure income was only £2,000. At present the debt was £50,000, and last year 80 beds had to be closed. He was also on the board of management of a large hospital in the Midlands, where the condition was similar; it had a debt of £10,000 due to increasing cost during and since the war. The cost of the concession had been carefully considered in consultation with the British Hospitals Association, the Red Cross Society, and King Edward Hospital Fund, and was estimated at between £80,000 and £130,000 a year. It was sought only for a period, until the hospitals had again found their feet. Against the possible objection that if the Chancellor yielded in favour of the hospitals he would have to do so for other charities, Viscount Ednam pointed out that a precedent distinguishing them from other charities existed in a special grant made by Parliament in 1920.

Dr. Fremantle, seconding the motion, suggested that one argument why Parliament should give to hospitals relief not given to other forms of charity, was that hospitals were an absolute necessity of modern civilization. If charitable efforts were to fail, there would be an overwhelming demand for support and maintenance out of the rates and taxes. At the recent conference on the voluntary hospital system, summoned by the Labour party, to which members of all parties were invited, a statement was presented by the Labour party, in which, after declaring its belief that hospital provision should be through the municipality or the State, it expressed its opinion that at the present moment voluntary hospitals were indispensable, for nowhere could they be replaced at the present time or in the near future. Speaking for the medical profession almost without exception, he could say that if the voluntary system could be kept it must be retained because it was preferable to any other.

Sir Charles Barrie, as a past chairman of one of the largest hospitals in Scotland, confirmed what had been said by the previous speaker. It would be lamentable if this country allowed the hospitals to be put on the rates or the State exchequer. Patients using the hospitals much preferred the voluntary to the State system. Lieut.-Colonel Spender-Clay also strongly supported the motion.

Mr. Snowden asked the House to reflect that it was not then discussing the question of a voluntary or of a State system for hospitals. The only question was whether hospitals should be free from legacy duty. He was sure there was no honourable member not in agreement with every word that had been uttered in the course of the debate in regard to the claims of these admirable, beneficial, and necessary institutions. The question must not be discussed from the sentimental point of view. In effect this proposal for the remission of taxation was a concealed subsidy to hospitals. If this concession were given it could not be confined to hospitals; he did not hold it inadvisable that the State should make some contribution to hospitals, but if it were desirable to give a subsidy it should be done in an open and straightforward way. Let the Government come to the House and say it was necessary for relief of suffering in this country that these voluntary hospitals should be kept alive and that their financial anxieties should be lessened or relieved. Let a claim like that be put forward and the House of Commons would give it sympathetic consideration. The remission asked, when distributed over all the hospitals, would be something like £80 to £100 each. Hospitals would gain very little and the State would suffer a good deal; it would lose £200,000 a year, because that would be the cost even if extension to other institutions could be prevented.

Viscount Ednam, replying, claimed that the benefit would be much more than the actual amount remitted, because it would directly encourage bequests.

Mr. Masterman agreed with the Chancellor of the Exchequer in his attitude, holding that if Parliament subsidized hospitals from the State it must also demand certain obligations to the State, and he considered that this proposal would mean a subsidy.

Sir Douglas Hogg denied that the proposal was one to subsidize hospitals out of public money without taking public control. It was a proposal to take a little less of the money of hospitals for the public exchequer.

Mr. Rathbone recalled that a previous Chancellor of the Exchequer, three or four years ago, provided that anyone who liked to bind himself to pay a subscription to a hospital or education body or religious body might pay the subscription less the tax. That was a concession equal to 4s. 6d. in the £. Further, if he were a super-tax payer, he might set off the gross amount of the subscription. It was quite easy in a large town to select a body like the Charity Organization Society, or any other body which was free from duty, to pay the guineas to that body and instruct it to pay the money into the hospital. Therefore, a very large concession was available—one not generally used—and the Chancellor of the Exchequer might employ the argument that until it was availed of he could not give any more.

Dr. Chapple stated that last year he voted for the motion, but on this occasion he was concerned for the Budget as a whole, and therefore supported the Government.

On a division the proposal was rejected by 251 votes to 148.

Sickness Benefits in Old Age.—Mr. W. Henderson inquired, on July 1st, as to the position of workmen over 70 years of age who were in employment and paid their National Health Insurance contributions, though they were not eligible for sickness benefit, being afraid of losing their employment if they disclosed their age. Mr. Greenwood said that the Minister of Health was aware of the point raised. The terms of reference of the Royal Commission would enable the question of the extension of the title to sickness benefit to persons over 70 years of age to be considered.

Service Pensioners: Convalescent Centres.—Mr. Muir (Parliamentary Secretary to the Ministry of Pensions) explained, on July 3rd, the new instruction as to the working week at convalescent centres of the Ministry of Pensions. The object was not to lengthen the working week, or even to lay down a definite number of hours of training to be performed by each man, but to fix a uniform maximum number of hours for all centres. The maxima had recently varied between the different centres from 27½ to 32½ hours a week. The maximum is now fixed at 30 hours a week with a break each morning of 15 minutes, the actual maximum thus being 28¾ hours a week. Within that limit the medical superintendent has full discretion to adjust how much time any individual shall work according to his physical capacity and the requirements of his medical treatment.

Health Services.—Mr. Black, on July 2nd, invited the Minister of Health to set up a Committee to inquire into the necessity for, and the advantages of, establishing a minimum standard in the administration of all health services included in his Ministry, in order to secure that the health interests of the public should be conserved in areas where the local authorities might not be progressive; and asked whether the Minister would include expert medical officers of health upon such a committee. Mr. Wheatley said that as at present advised he did not think the appointment of a committee would be of advantage.

Expenditure on Vaccination.—The Minister of Health stated, on July 3rd, that the sum of £172,558 (expenditure on vaccination for the year 1921-22) included £10,158 paid to public vaccinators out of the Exchequer Contribution Account of the local authorities, and £162,400 expended by Boards of Guardians out of the rates, but he could not supply further details. The number of infants vaccinated by public vaccinators during the year ended September 30th, 1922, was 205,106. It was not possible to state the cost per infant vaccinated, as the expenditure on public vaccination included also the cost of other vaccinations and re-vaccinations, and the necessary administrative expenditure.

Control of Liquor Bill.—The Bishop of Oxford's Control of Liquor Bill was refused a second reading in the Upper House on July 7th by 166 votes to 50. Lord Parmoor, Lord Milner, the Archbishop of Canterbury, and the Bishop of St. Albans endeavoured to meet criticism of provisions by urging that if referred to Committee the measure could be modified and changed. The Bishop of Durham spoke strongly against the bill, declaring that it enshrined the principle of prohibition, which he held to be unsound.

Home Treatment for Ex-Service Men.—Mr. Grave, on July 6th, called the attention of the Minister of Health to the working of the new circular "M.P.A.C. Home Treatment," whereby Ministry doctors referred ex-service men to general practitioners under the National Insurance scheme for home treatment. The point of a lengthy question was that a certificate of the insurance practitioner that the man was unfit to work was not reckoned adequate to secure the man allowances. Mr. Muir, for Mr. Roberts, declined to accept the argument of the questioner, but said that the circular letter did not appear to be satisfactory, and would be reconsidered.

Medical Examination of Juvenile Offenders.—Mr. Birkett asked, on June 19th, whether the Home Secretary had received any report from the petty sessional divisions in England and Wales as to the desirability of a competent medical man being at the service of the probation officers in cases of young offenders who were suffering from epilepsy and kindred diseases. Mr. Henderson replied that he had not. Some juvenile courts made arrangements for the medical examination where necessary of young offenders who were brought before them, and attention was drawn to the desirability of such a practice in the report of the Children's Grants issued last year. The matter was receiving further consideration.

Pure Vinegar.—Mr. Hannon brought in a bill, on June 25th, to prevent the sale of liquid or products made in imitation of and purporting to be vinegar. It was, he said, one of the defects of the Food and Drugs Act that no provision was made for fixing the standard of vinegar. Imitation vinegar was prepared by diluting commercial acetic acid, and staining it to resemble pure vinegar. Sometimes sulphuric and other acids were added to give greater acidity. The bill followed in the main principles already adopted in similar legislation in the United States, New Zealand, South Africa, Australia, and Canada. Dr. Hamill of the Local Government Board, in a report made in 1908, pointed out that vinegar lent itself to imitation, and when that happened became a dangerous drug. Still more recently, when an inquiry was made under the Profiteering Act, it was stated that brewed vinegar cost twice as much as unbrewed, and so the latter was sold by dealers at a much greater margin of profit.

Notes in Brief.

The number of persons receiving treatment in residential institutions under the tuberculosis schemes of local authorities in England and Wales on June 1st was 18,245, and the number recommended for and awaiting such treatment on that date was 4,150. It is hoped that the circular issued by the Ministry of Health last February, promising grants in aid of approved proposals, will result in the substantial addition to the available accommodation for the treatment of this disease.

The Council of the League of Nations is in favour of locating the Far Eastern Epidemiological Intelligence Bureau at Singapore, and the Colonial Secretary has stated that the steps which can be taken to facilitate the carrying out of this proposal will receive consideration.

The number (uncorrected) of notifications in England and Wales during the twenty-six weeks ended June 28th: Small-pox, 2,196; diphtheria, 18,095; scarlet fever, 36,910; pneumonia, 41,321; enteric fever 1,603; encephalitis lethargica, 3,620.

As soon as the investigations of the Ministry of Health in regard to proprietary and patent foods have been completed, the steps that should be taken will be considered.

The Minister of Health stated, on July 2nd, that the terms of reference to the Royal Commission on Lunacy included inquiry into the certification, detention, and care of persons under the Lunacy Acts, whether in public or private institutions or in single care. Witnesses summoned by the Commission to give evidence before it in London would be repaid their expenses in accordance with the scale prescribed by the Treasury.

Correspondence.

THE CANCER INQUIRY AT LIVERPOOL.

SIR,—It is proper that I should bring to your notice a grave example of the harm that is accomplished by incompetent and irresponsible reporters. In an address at the congregation for the conferment of degrees in this university on Saturday last, reviewing the work being accomplished in our laboratories, I referred to the work of our Cancer Research Committee in the following words: "The matter is of such vast importance to the welfare of humanity that it is necessary to proceed with the greatest caution so as not to encourage false hopes. But through the co-operation of many of our staff and various laboratories steady progress is being made. We have reached the stage when we can cause the disappearance of some, *though* not all, internal cancers." Despite this preliminary warning of our anxiety not to encourage false hopes, a Liverpool evening paper quoted me as announcing that we have reached the stage when we can "cause the disappearance of some, *if* not all, internal cancers."

It is difficult to discover any excuse or explanation for such perversion of my words; as shown by my piteous correspondence during the last forty-eight hours, the perverted statement has been broadcasted through the press of Great Britain. It is true that the journal responsible for this error has published a very full correction and retraction, but unfortunately this correction is unlikely to be similarly broadcasted. I owe it to my colleagues and to the medical profession to emphasize that I made no such assured announcement as has been credited to me.—I am, etc.,

J. GEORGE ADAMI.

The University of Liverpool,
July 8th.

THE LEFT-HANDED CHILD.

SIR,—The case referred to by Dr. Drinkwater (June 21st) is of very great interest as an extreme example of bilateral synergia, as contrasted with the two extremes, sinistral and dextral pre-eminence.

Bilateral representation in the cerebrum was very ably discussed long ago by Broadbent, and his conclusions have sometimes been referred to as Broadbent's law.*

As regards the motor side of the nervous system the adductors of the vocal cords are examples of complete bilateral representation and the lower face and tongue of partial, whilst it is by a very partial bilateral representation of the hands that I have sought an explanation of mirror-writing. Probably the amount of this motor bilateral representation in the cerebrum varies in different individuals; but Dr. Drinkwater's case is abnormal in that not only was the motor or efferent side bilaterally represented to an extreme extent, but also the sensory or afferent side, ordinary sensation approaching to what one finds normally in the special senses of sight and hearing.

Dr. Harford's letter (June 21st) suggests the question whether any diseases, defects, or disturbances of function of the mind and nervous system are ever primarily or fundamentally psychogenic in origin. He says:

> "If, then, it is found that left-handedness, in common with squint and stammering, is due to a temperamental difficulty, as scientific workers we must set ourselves to deal with the cause rather than the effect."

But which is the cause and which is the effect? What is meant by temperamental difficulty? Do not variations in temperament result from variations in anatomical structure and physiological associations, perhaps also variations in quality of the neurons in different individuals and at different times, these latter variations brought about by many factors (food, hormones, toxins, etc.)? The fact that Dr. Harford claims that these three disorders are related to similar phenomena in members of the same family justifies one in concluding that he would not disagree with the above because the only alternative seems to me to be that dis-

*His views will be found in the *British and Foreign Medico-Chirurgical Review*, April, 1866, and *Medico-Chirurgical Transactions*, 1872 (The Cerebral Mechanism of Speech and Thought), and are still well worthy of study.

orders of mentality or temperamental difficulties as such can be transmitted and inherited, the psyche *qua* psyche in one individual begetting a similar psyche in another.

If left-handedness has an anatomical and physiological etiology we must patiently set ourselves to train the child physiologically, educate him gradually to develop his body in the direction we think beneficial. Suggestion must always take a prominent place in all forms of training, and in this I agree with Dr. Harford in his remarks at Portsmouth (BRITISH MEDICAL JOURNAL, November 24th, 1923), but suggestion, which to me is the basis of all psycho-therapy, before it can be therapeutically beneficial must act physiologically. If, as he says, stammering is so apt to be associated with left-handedness (of this I express no opinion), is it not more reasonable to suppose that the stammering which may have come on during the training of a child to use the right hand is not the result of such training, but rather the derangement often associated with left-handedness?—unless, of course, methods of compelling have been used, which can hardly be described as patient gradual training. I agree that such training is a difficult matter and caution is needed, but a child who is very decidedly left-handed, belonging to Dr. Drinkwater's first group, is so handicapped in after-life that it is very desirable that much trouble should be taken to educate him to become ambidextrous, and thus transfer him to the second group, to which, as has been pointed out, some of our most useful and highly trained citizens belong. Most of those who are ambidextrous had originally a more or less tendency to left-handedness, and have either of their own accord or by assistance trained themselves to use both hands. It cannot be too much emphasized how greatly handicapped an extremely left-handed individual is. Practically every machine and instrument of utility, sport, and amusement is primarily devised to be used by the right-handed. Writing itself, as we know it, was devised for the right hand. A left-handed person writing in the usual way from left to right has to make the general movement of his arm adductor instead of abductor in character, and cannot see clearly what he has written. His facility in writing is thus interfered with and he is at a disadvantage.

Besides, it must not be forgotten that the kinaesthetic impulses resulting from specialized and skilled movements carried to the cerebrum play a part—perhaps not a small one—in stimulating the growth and development of the intellectual faculties. The left-handed, because of more limited opportunities, are to some extent deprived of these stimulating influences; and it is little wonder, therefore, that many in the first group, if not originally feeble-minded or below the average in intelligence, as Dr. Drinkwater says, may ultimately tend to become so. Manual exercises of all kinds are of course desirable, but one of the most natural, most helpful, and most easily applied methods of training the right hand is to teach the child to write with it, and the result if thoroughly successful leaves the individual much less handicapped in later life.—I am, etc.,

Leith, June 28th. WILLIAM ELDER, M.D., F.R.C.P.E.

THYROID EXTRACT AND MANGANESE.

SIR,—Having persuaded myself that the larger proportion of the community were in a subthyrotic condition, and believing that this might account for some of the diseases and infections which have been considered as likely to arise from auto-intoxication, I began to use small doses of thyroid extract very freely. This lead to combining it with other treatment, and lately with potassium permanganate.

The results obtained in a limited number of cases under my own supervision during the past few months encouraged me to enlist the interest of some of my professional friends. My own observations were confined to a few cases of chronic rheumatoid arthritis, a case of acute rheumatoid arthritis, one of alopecia areata, angina minor, diabetes mellitus, acute tonsillitis, *Bacillus coli* infection, phlegmasia alba dolens, and a case of chronic gout with erythema, all of which responded favourably.

Dr. McKenna of Liverpool has reported that in the space of three or four weeks he has found the treatment most useful in pemphigus foliaceus, septic dermatitis, and in a troublesome case of recurrent erythema. Dr. Taylor of Chester says he has used it very effectively in a severe case of cerebro-spinal meningitis.

The treatment is being used by other observers, and when their reports come to hand we shall hope to be able to publish a paper combining our several views and experiences.—I am, etc.,

Little Sutton, near Birkenhead, July 1st. H. W. NOTT.

THE CAUSATION OF CANCER.

SIR,—It is the duty of a student in any department of scientific thought to pay heed to the views of others, more especially when they run contrary to conclusions to which his own investigations are apt to drive him. To do otherwise is to incur the risk of perpetuating error and of hindering progress, and no one who cares more for truth than belief would scruple to abandon his most cherished convictions if their falsity or their weakness were demonstrated. In science nothing is fixed and settled beyond dispute, and advance often comes by criticism of authoritative or generally accepted opinion.

When, therefore, Dr. A. T. Brand in his first letter expressed himself so strongly in favour of the idea that cancer is due to a single and invariable causal agent, a micro-organism hitherto undiscovered, and still more strongly in opposition to the views we have entertained, I had hoped by discussion to draw from him reasons and facts which would support his beliefs and might be expected to keep us from persisting in error. That hope has been disappointed. He merely repeats over and over again what he said originally, and it all comes to this: cancer is a specific disease because it is obvious that it must be so; being so, it must have a single specific cause because it is indisputable; having a single cause, this must be a specific extrinsic agent because it is a fair assumption; the extrinsic cause must be a micro-organism because micro-organisms generate toxins; and all specific diseases, and especially cancer, are due to toxins. Well, it is not helpful. I should hesitate to call it nonsense, but I confess I do not understand it. If experimenters find that cancer follows (sometimes in 100 per cent. of cases) the prolonged use of certain things they call irritants, they are, according to Dr. Brand, wrong in assuming that such irritants are the causal agents of the effects, because it is indisputable that they are merely predisponents, and predisponents cannot be prime causes. Against such an inexorable bulwark of devastating assertions facts beat in vain and argument is useless.

Dr. G. W. F. Paul (BRITISH MEDICAL JOURNAL, June 28th, p. 1156) argues that since the irritants we have used do not always cause the disease, we must assume that there is some other condition or specific agent necessary. Dr. Paul will, no doubt, admit that the diphtheria bacillus causes diphtheria in some people and not in others, though the latter may have the organism present. The same thing applies to all pathogenic agents and to all diseases, but it does not invalidate our conception of what we agree to call "prime causes." Why disease results in one man or animal and not in another similarly exposed to the main causal agent we do not know, and we merely repeat the conundrum when we say that one is susceptible and the other resistant.—I am, etc.,

London, S.W.3, July 5th. ARCHIBALD LEITCH.

*** While we shall be ready to receive any correction of fact, we consider that with this reply from Dr. Leitch this correspondence may properly be brought to an end.

CARDIAC DELIRIUM.

SIR,—It may be that unconsciously a man tries to probe more deeply into the circumstances surrounding those diseases in which he feels a particular interest, and that so in the study of patients with heart disease I have met with a degree of self-revelation exceeding anything I have found elsewhere. This may be due to the necessarily long attendance that many such patients demand, and is more evident in private practice than in hospital, for in private practice the individuality of the patient is preserved and intensified

in the face of illness to a degree far beyond that encountered in hospital, and so the practitioner is not seldom faced with difficulties for the solving of which the literature at his disposal offers little aid.

I call to mind one case of this type of delirium peculiar to heart disease in which it was never far away in the last few months of the patient's life. On entering his room I have been met with the query, "How did you get here?" At various times he presented more than one of the delusions cited by Sir Clifford Allbutt in your issue of June 28th, and they were often intermixed with delusions of an "occupational" nature. The patient was a railway guard—one of three railway servants I was attending simultaneously who betrayed during illness mental symptoms closely related to the responsibility of their occupation when in health—and, although the subject of extreme cardiac failure, would rise from his bed during the night and, easily overcoming the efforts of his relatives, for he had great strength, would endeavour to "couple" his bed to the chest of drawers, under the impression that he had fallen asleep in a truck.

Apart from mental symptoms resulting from the cardiac disorder there are perhaps few diseases where the efforts of the physician may be helped or hindered to so great an extent by the psychology of the individual. In the former case the cheerfulness of the patient begets in his attendant a cheerfulness which works in his own favour. In the latter I have found that close inquiry along lines not indicated in clinical textbooks may show that a melancholic or other adverse attitude is not wholly attributable to the patient's disease—that such an outlook on his condition is indeed concomitant with his lifelong outlook on the universe. It is in this respect that our knowledge of the material facts of disease fails us, that our study of the psychological substratum of man's nature must come to our aid, and it is in heart disease that this substratum often becomes exposed by the eroding influences of continued ill health or of a fearful anticipation of this earthly journey's end.—I am, etc.,

Dundee, June 30th. JAMES M. STALKER.

SIR,—I have read with interest Sir Clifford Allbutt's short note on the above subject. He is evidently a diligent reader of the BRITISH MEDICAL JOURNAL when he derives inspiration from the Epitome, but surely the "Dr. W. B. Richardson" to whom he refers is no less a personage than the late Sir Benjamin Ward Richardson. The paper to which Sir Clifford Allbutt refers appeared in Richardson's monumental work the *Asclepiad*, vol. i, p. 289, 1884. In the second volume, 1885 (p. 221), Richardson refers in very complimentary terms to Clifford Allbutt's description of cardiac delirium or "the delirium of place." Richardson concluded the first article as follows:

> "In the subject broached in this paper a road is opened by working in which any industrious and observant student of medicine may win a golden harvest brightened by the hope of usefulness and reputation. Toiling in this field, he must afford to wait patiently for the acknowledgement of his labours, assured, indeed, from the outset that it will be many a long year before he will be understood, but equally assured that when understood the appreciation, superbly enviable, will repay every stretch of industry, however severe, however prolonged. My work must be accepted simply as a finger pointing the way."

Sir B. W. Richardson only died in the late nineties of last century, but so ephemeral is the public, and even the professional, recollection of the work of a really great man that we now seldom hear his name mentioned except by a few teetotal faddists—even Sir Clifford Allbutt transposes his initials, and the Editor of the BRITISH MEDICAL JOURNAL fails to detect and correct the obvious error.

I have a vivid recollection of a discussion which I had with the late Sir William Broadbent on the merits of the works of Richardson, whom I described as a genius, one of the very few who had adorned medicine. Broadbent would not go so far, but said that Richardson narrowly escaped being a genius.

Richardson forestalled Ford Robertson and others in pointing out the relation of intestinal intoxication and drugs to insanity. Although he is dead and apparently forgotten, he has left in the *Asclepiad* work which will live and from which inspiration can be drawn for many a year to come. Some of the young men of the present day who are ever anxious to make new discoveries in which they glory until they are found out, and then sulk in silence till the storm blows over, might find Richardson's numerous finger-posts worthy of consideration.—I am, etc.,

Liverpool, June 30th. JAMES BARR.

SIR,—At the present time I have under my care a middle-aged woman, who first consulted me in the last week of December, 1923. She was then suffering from auricular fibrillation with cardiac failure, evidence of which was pronounced. Under appropriate treatment the anasarca began to clear up and the fibrillation was checked. Some days later she developed typical "travelling delirium" and had repeated angry arguments with her nurse, who endeavoured to dispel her hallucinations. The delirium gradually ceased, and the patient continued to make good progress. The fibrillation has recurred several times, yielding to renewed treatment; but the "travelling delirium" has not returned, though she suffers from mental confusion of varying degree during the bouts of fibrillation. At the present time heart rate and pulse rate are 68 a minute, regular. In this case there is no evidence of valvular lesion, but degeneration of the myocardium is probably present.

The case seems worthy of mention, because (1) the delirium ceased without a fatal issue, (2) the onset of the delirium occurred after the gravest physical signs and symptoms had subsided.—I am, etc.,

Reading, June 30th. GORDON LAMBERT.

THE ADMINISTRATION OF OXYGEN.

SIR,—In common with your correspondent, Dr. Laing (June 14th, p. 1074), I have felt dissatisfaction with the ordinary methods of giving oxygen, whereby it is delivered in front of the patient, only to be blown away by the expired air. A more satisfactory method for the less severe type of case is to supply it through a simple tube, which delivers the oxygen somewhere near the angle of the mouth so that the oxygen will be drawn into, and mix with, the expired air. The tube can be fixed by a safety pin to the pillow or the patient's night attire. In more severe cases the plan suggested by Dr. Laing is good, or in the case of a man who smokes the mouthpiece of a pipe or a cigarette holder can be fitted into the end of the oxygen supply tube.

When giving oxygen continuously thus, it is of great importance to regulate its amount, and this can easily be done when bubbling it through water in a Wolff's bottle by listening to the rate at which the bubbles are breaking. They should break at the rate of 4 or 5 a second—that is, almost as fast as possible, short of the stream being a continuous one. If they fall to 2 or 3 a second the supply of oxygen will be less than is desirable. Given at the suggested rate a large cylinder of oxygen will last more than twenty-four hours.—I am, etc.,

Birmingham, July 3rd. T. STACEY WILSON.

IMMUNIZATION AGAINST DIPHTHERIA.

SIR,—The following record of the work done at an infant welfare centre in connexion with the immunization of diphtheria may be of interest.

From April, 1922, when the work commenced in Holborn (population 43,520), to April, 1924, a period of two years, 500 persons were tested at the infant welfare centre. Of these, 149 gave a negative response and 351 a positive response to the test; 271 positives completed the course of inoculation for immunization; 25 cases were still in progress of immunization. In 2 cases owing to marked reaction the injections were postponed. In 23 cases inoculation was not begun—4 were adults, but 19 were young children whose fathers refused to consent to their immunization, although susceptibility was demonstrated.

In 30 cases inoculation was begun but not completed; often some external circumstances occurred to break the routine attendance, and the mother could not be persuaded again to form the habit of attendance. Many of these children had been inoculated twice, and if they can at any time be retested will probably be found to give a negative response.

Included in those who are counted as immunized is one child (8 months) who gave a negative response after one dose of toxin-antitoxin. One child (9 years) was given six doses and one (13 years) had 4 doses. Retesting some weeks after the third inoculation was not very popular, but there is now less objection raised, owing to the growth of confidence in the whole procedure.

The fundamental difficulties that have to be contended with in persuading parents to avail themselves of immunization against diphtheria are that they have a deeply rooted objection to inoculation. They dread reaction to inoculation and fail to realize that any inconvenience or suffering so entailed is negligible as compared with that of an attack of an infectious disease. Some parents have an almost unshakable belief in a malignant fate, and as a consequence lack faith in the efficacy of preventive measures. On the other hand we find that parents who object to vaccination against smallpox will have children inoculated against diphtheria.

It is not expected that the number of cases of diphtheria or the number of deaths from this disease will be markedly lessened in Holborn yet, but if the procedure goes on even at its present rate in time some effect must be produced. We hope, however, that gradually more and more children will be immunized, especially if other local authorities will take it up.

It is probable that as the years go by parents will find their non-immunized children developing diphtheria whilst immunized children living in the same house or locality escape the disease—we have already had instances of this; and as the knowledge spreads that freedom from the disease has been produced by immunization this method of prevention will become increasingly acceptable to the parents.

We can definitely say that no case of diphtheria has occurred amongst any of the children immunized at the Holborn centre.—I am, etc.,

London, W.C.1, June 25th. C. W. HUTT.

INSULIN AND INSULIN-LIKE BODIES.

SIR,—In what is otherwise an excellent report (BRITISH MEDICAL JOURNAL, July 5th, p. 15) of some opening remarks made by me at the Aberdeen Medico-Chirurgical Society on June 5th, there is a misleading sentence bearing on the question of the occurrence of insulin or insulin-like bodies in tissues other than pancreatic islet tissue. Whatever may be the significance of the reported finding of such bodies in certain other animal tissues of vertebrates and invertebrates, there is no evidence that the substances ("glucokinins") in certain vegetable extracts (lawn grass, etc.) are really of the same character as insulin, though they have been found to be remarkably effective (like insulin) in cutting down the percentage of blood sugar—an influence that can be passed from one animal to another by the transference of very small amounts of blood. It is highly improbable that these substances are essentially of the same nature as insulin.—I am, etc.,

Aberdeen, July 5th. J. A. MACWILLIAM.

THE ADMINISTRATION OF PLAGUE VACCINE.

SIR,—Last February, while on leave in India, I had an occasion of seeing some persons who had been inoculated against plague. The reaction (both local and general) in nearly every one of them was severe. Each of them had the full dose (4 c.cm.) of the vaccine at one sitting.

Last month I was detailed to inoculate the personnel in this hospital. I divided the people to be inoculated into three groups, the classification being irrespective of weight, age, or physique.

Group I was given the full dose at one sitting.
Group II was given the initial dose of 2 c.cm., and the remaining 2 c.cm. six days latter.
Group III was given the initial dose of only 1 c.cm., followed by the second dose of the remaining 3 c.cm. six days later. This group included nursing sisters and a patient to whom I administered the initial dose immediately after opening an abscess in the axilla; his temperature at that time was 102°.

The results were as follows:

Group I.—More than 80 per cent. developed severe reaction, both local and general, the temperature ranging from 101° to 103°. Headache and general malaise were the most prominent symptoms.
Group II.—Only about 10 per cent. had slight fever. The local reaction was moderate.
Group III.—Except just a little tenderness and a small zone of hyperaemia at the site of inoculation, there was no local reaction. None of them had the slightest general reaction. Everyone went about their business and took part in the games in the evening as usual.

The conclusion I came to was that the reaction was due to the absorption of the endotoxin of *B. pestis* as well as the culture media (broth) in which the organisms were grown and suspended; that the reaction was directly proportional to the amount of vaccine introduced into the body; and that injection of a small initial dose renders the system more tolerant to the succeeding dose, and thus the severity of reaction is mitigated.

I would also like to mention that the year before last, while recording a plague case at Peshawar, I cast some doubts on the prophylactic value of the plague vaccine; since then I have become firmly convinced of its efficiency, so much so that I have been inoculated myself.—I am, etc.,

R. MANSOOR, M.B.Durh.,
Lieutenant I.M.S.(T.C.).

R.A.F. Indian Hospital,
Baghdad, May 15th.

LIFE INSURANCE WITHOUT MEDICAL EXAMINATION.

SIR,—There is one point which the life insurance companies, which have in part or whole adopted the method of non-medical life insurance, have overlooked—namely, the safeguard which a medical examination gave to those about to marry. When parents have expressed to me doubts as to the health of a prospective son-in-law, and yet do not like to suggest openly to him that he should be "vetted," I have always advised them to invite him to insure his life in a company which requires a strict medical examination. This acts beneficially in two directions—by, in the first place, setting their minds at rest as to his health, and also by providing some provision for the future maintenance of his wife-to-be. Members of the medical profession are often consulted with regard to the choice of an insurance company, and, without mentioning the name of any particular company, a list might be kept containing the names of those insurance companies which require a medical examination in all ordinary cases, the intending applicant being advised to select a company from that list.—I am, etc.,

July 2nd. MEDICAL REFEREE.

Universities and Colleges.

UNIVERSITY OF OXFORD.

Radcliffe Scholarship in Pharmacology.—The Master and Fellows of University College have awarded the Radcliffe Scholarship in Pharmacology in equal shares to T. C. Hunt, Magdalen College, and Alice D. K. Peters, St. Hugh's College, whose work was reported by the Professor of Pharmacology to be of equal merit.

Welsh Memorial Prize.—Dr. Lee's Professor of Anatomy has reported to the Vice-Chancellor that he has awarded the Welsh Memorial Prize for the best set of anatomical drawings in relation to human anatomy to P. M. F. Bishop, Trinity College.

The following candidates have been approved at the examination indicated:

FINAL B.M., B.CH.—*Materia Medica and Pharmacology:* J. W. Alden, R. H. B. Bettington, M. D. Bower, G. Campbell, N. Chilton, J. H. Chitty, R. T. V. Clarke, P. F. Cluver, G. H. Cripps, D. M. Dunlop, J. A. Eyres, A. C. Gairdner, P. S. Hamilton, H. E. Harding, R. Illingworth, J. H. Kennedy, G. L. M. MacElligott, C. W. Mackenzie, R. G. Mathews, J. C. Neely, B. V. O'Connor, F. G. Parker, R. C. Probyn-Williams, W. F. H. Ray, D. I. Rees, W. G. Rees, A. Reid, D. A. Robertson, F. J. Sale, T. H. Sellors, G. P. Thorold, R. L. Graves, M. N. Jackson, C. I. Pattullo, A. D. K. Peters. *Pathology:* G. R. P. Aldred-Brown, E. N. Allott, H. N. Bradbrooke, A. V. Clemmy, P. F. Cluver, L. O. F. Fysh, T. C. Hunt, R. Lewthwaite, P. C. Mallam, M. J. W. Minshull, P. Morton, W. D. B. Read, D. A. Robertson, G. P. Roxburgh, J. de la Mare Savage, T. H. Sellors, C. W. Simpson, R. S. Wordsworth. *Forensic Medicine and Public Health:* J. W. Alden, M. M. Baird, L. J. Barford, R. J. Brocklehurst, C. W. Carter, H. N. K. Elphick, K. J. Franklin, C. J. Fuller, J. R. F. Hern, P. H. Martin, J. D. Mills, H. W. Pearson, A. A. F. Peel, D. I. Rees, A. W. L. Row, T. E. Ryves, J. G. S. Thomas, E. C. Whiteball-Cooke, G. P. Wright. *Medicine, Surgery, Midwifery:* G. R. P. Aldred Brown, W. B. Boone, W. H. Bradley, R. E. D. Cargill, C. W. Carter, T. H. Cathrall, J. L. Cox, C. L. Elgood, K. J. Franklin, A. T. Fripp, C. J. Fuller, D. R. Gawler, C. A. H. Green, E. H. Koerner, W. J. Lupton, H. W. Pearson, A. A. F. Peel, T. E. Ryves, I. M. Sidley, G. I. Wilson, G. P. Wright.

At a congregation held on July 5th the following medical degrees were conferred:

D.M.—J. F. Venables, G. K. Stone, H. H. Sanguinetta.
B.M.—D. R. Gawler, A. A. F. Peel, G. P. Wright, K. J. Franklin, C. W. Carter, C. J. Fuller, G. I. Wilson, W. J. E. Lupton, H. W. Pearson, W. H. Bradley, R. E. D. Cargill, C. A. H. Green, G. R. P. Aldred-Brown.

UNIVERSITY OF LONDON.

Research Grants.

AT the meeting of the Senate held on June 25th grants out of the Dixon Fund for the year 1924–25 were made as follows:

£50 for research on the physiological factors governing the proportions of sexes in mammals to Alan Sterling Parkes (Institute of Physiology, University College); £50 to Eric Arthur Spaul, Ph.D., to continue experiments with the anterior lobe pituitary gland, and to gain further knowledge of the properties of the active principles of this portion of the gland and also its biochemical properties (Zoological Laboratory, Birkbeck College); £50 to Florence Mary Wood for chemicals and apparatus in connexion with research upon the chemical nature of the cellulose membrane: £20 to Muriel Bond, M.Sc., for research into the dietetic factors influencing reproduction (London School of Medicine for Women).

LONDON HOSPITAL MEDICAL SCHOOL.

Prize Distribution.

The prizes and certificates gained by students of the London Hospital Medical College were distributed on June 30th by Sir Arthur Keith, M.D., LL.D., F.R.S., in the Library of the College. Lieutenant-Colonel W. Marlborough Pryor, D.S.O., Chairman of the College Board, presided. The Dean (Professor William Wright) in his report said that among the changes which had taken place in the College the most important was the discontinuance of the teaching of what were formerly the subjects of study during the first year of the medical curriculum—namely, elementary chemistry, physics, and biology; and the General Medical Council had now removed elementary chemistry and physics from the medical curriculum and made them the subjects of a pre-medical examination. The change had provided increased accommodation for the teaching of the purely medical subjects, while funds had been released for improving the teaching arrangements in connexion with, more particularly, the clinical subjects. The appointment of, in addition to the staff of the medical unit, five surgical and four medical whole-time assistants, selected from the ablest of the younger men, was a new departure in the organization of clinical teaching, and should, with the unrivalled clinical facilities at the London Hospital, ensure that in the spheres of clinical teaching and research they would more than maintain their already high position among the medical schools of the country. The trustees of the late Sir William Dunn had recently presented the hospital, at a cost of £8,000, with a series of clinical laboratories, and the Goldsmiths' Company had given £15,000 for the endowment of the Goldsmiths' Chair of Bacteriology.

After presenting the prizes and certificates to the successful students, Sir Arthur Keith said that to get a good reputation was the easiest thing in the world, and with that object everything they did must be unselfish. The unforgiveable sin which would never be forgotten was that of selfishness—that of playing entirely for one's own hand. In aid of a good reputation came absolute honesty of purpose, speaking as near the truth as they could when the occasion called for it. They should not mislead their patients. No medical man was honest who was not familiar with what was happening in the best medical circles in the way of discovery and advance in medicine. They could not be honest unless they continued to be medical students all through their lives. It was necessary for them to read constantly the medical papers. The particular kind of unselfishness which appealed to him more than any other was that which led men to devote their energies and their time to the discovery of fresh facts which made medicine a better equipped tool in the hands of medical practitioners.

LONDON SCHOOL OF MEDICINE FOR WOMEN.

Research Fellowships in connexion with the Obstetrical and Gynaecological Unit have been awarded to Miss Olive Rendel, M.D., and Miss Alfreda Baker, M.D. A "1916" bursary, of the value of £50 a year for five years, will be awarded to a student who has matriculated and who wishes to enter the school in October, 1924, to begin a full course of study for a medical degree. Particulars may be had from the warden and secretary, 8, Hunter Street, W.C.1.

UNIVERSITY OF BIRMINGHAM.

THE following candidates have been approved at the examination indicated:

FINAL M.B., CH.B.—*Class II:* Mary E. Appleby, E. J. Bailey, P. A. V. Barford, *R. B. B. Barnes, C. H. G. Bekenn, J. K. Bostock, D. M. Brown, H. F. Burtt, H. Caplan, Doris M. E. Carrington, Olive G. Coldicott, A. J. Davies, Elsie C. Davies, H. W. Donovan, T. S. Donovan, Dorothy M. Ellerton, Dorothy K. Elliott, Vera Fellowes, J. W. Field, F. E. Gould, Irene D. F. C. Hastilow, F. H. Healy, L. C. Hill, †W. C. O. Hill, A. B. Hodgson, H. F. Jukes, D. Magrath, Evelyn D. May, Y. Nawar, Muriel I. H. Naylor, A. Phipps, J. D. Pike, C. J. Polson, ‡Jessie L. Robb, A. G. Taylor, R. Thomason, Eileen M. Wake, V. G. Williams, L. F. Wilson.

* Distinction in medicine.
† Distinction in midwifery and diseases of women.
‡ Distinction in surgery.

The following appointments are announced: *Ingleby Lecturer for 1926:* Sir Gilbert Barling, Bt., F.R.C.S. *Professor of Midwifery and Diseases of Women:* Mr. H. Beckwith Whitehouse, M.S., F.R.C.S. *Lecturer in Pharmacology and Therapeutics:* Dr. J. Maclure Smellie. *Assistant to the Chair of Surgery:* Mr. Bernard G. Goodwin, F.R.C.S.

UNIVERSITY OF DUBLIN.

SCHOOL OF PHYSIC, TRINITY COLLEGE.

THE following candidates have been approved at the examination indicated:

FINAL M.B., PART I.—*Materia Medica and Therapeutics; Medical Jurisprudence and Hygiene; Pathology and Bacteriology:* *R. L. Forsyth, J. E. M'Cauley, R. MacN. Allardyce, Annette K. Wood-Martin, V. St. G. Vaughan, R. G. Keays, G. T. L. Archer, B. P. Pienaar, Elspeth V. D. Hewat, M. A. W. Roberts, H. O. Clarke.

PART II.—*Medicine:* *R. F. J. Henry, G. Purdy, J. K. S. Thompson, J. L. Stuart, J. S. Armstrong, J. E. Beatty, G. W. Garde, J. R. Bradshaw, E. Harvey, J. Crawford, C. J. du Plessis, J. H. Bowyer, L. D. Dennard, R. A. Webner, R. G. F. Thompson, L. M. Whitsitt, G. A. Sloan, A. Hawthorne, H. W. Strong, A. J. Head, L. S. Levitt, F. J. Swanepoel. *Surgery:* G. Purdy, J. K. S. Thompson, D. L. Hemmingway, M. A. Gerrard, R. E. Steen, I. Rosin, D. K. Lyons, J. V. Morris, G. A. Cowan, A. J. Mooney, G. Robinson, F. J. Swanepoel, C. Wilson, L. D. Dennard, J. Morris, J. L. F. Steele, O. G. Wilde, Eileen Brangan, A. B. Monks, Sylvia B. Wigoder, G. A. Sloan, S. Wigoder, S. M'Dermott, M. J. Bradlaw, S. E. Magowan, H. Ruben, A. L. Dobbyn, K. F. Mackenzie, R. L. G. Proctor, J. H. Bowyer, J. S. Armstrong, W. A. Hopkins, M. D. Fox, L. S. Levitt, J. N. Atkinson. *Midwifery:* *T. W. MacDowell, J. V. Morris, W. Gallaugher, W. A. Taylor, T. C. Foster, R. V. Franklin, R. T. Cronin, Annie T. Deane, Mary C. Livingston, W. C. G. Potts, F. J. Marais, E. A. Bennet, W. G. Maule, J. St. Clair, P. Wallace, H. Waters, W. A. Hopkins, O. Chance, E. C. Dudgeon, R. H. M'Keag, G. J. Joubert, G. A. A. Powell, E. T. S. Rudd, C. L. Taylor, F. V. Duke, C. P. Wallace, D. N. Power, T. G. B. Crawford, Margaret O'Neil, W. O. Warrington, E. S. A. Crawford, G. F. Gillespie, L. D. Dennard.

DIPLOMA IN PUBLIC HEALTH, PART I.—*Chemistry, Bacteriology, Physics, and Meteorology:* Alice M. A. Downing, W. E. Hutchinson, E. Parker.

PART II.—*Sanitary Engineering; Practical Sanitary Report; Hygiene and Epidemiology: Vital Statistics and Public Health Law:* B. W. D. Fayle, W. E. Hutchinson, Alice M. A. Downing, R. S. M'Elroy, A. E. Campbell, Mary M. Galvin, Ruth Lemon, N. M'L. Falkiner, Iris P. Nelis.

DIPLOMA IN GYNAECOLOGY AND OBSTETRICS.—Sylvia G. de L. Chapman.

* Passed on high marks.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

AN extraordinary comitia was held on Thursday, July 3rd, at 5 p.m., the President, Sir Humphry Rolleston, being in the chair.

A report was received from the treasurer on the commemoration of the tercentenary of the death of Thomas Sydenham at the Académie de Médecine de Paris, held on May 20th last.

The quarterly report of the College Finance Committee was received and adopted.

Dr. A. J. Hall was reappointed a representative of the College on the Court of Governors of the University of Sheffield.

After some further formal College business the President dissolved the comitia.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AT a meeting of the Fellows on July 3rd three Fellows were elected into the Council in the vacancies occasioned by the retirement in rotation of Mr. Haslam, Mr. Openshaw, and Mr. Raymond Johnson. The result of the poll was as follows:

	Votes.	Plumpers.
WILLIAM MCADAM ECCLES	463	32
WILFRED TROTTER	371	20
SIR CHARLES GORDON-WATSON, K.B.E., C.M.G.	359	23
Victor Bonney	342	4
William Ernest Miles	258	13
Arthur Henry Burgess	235	30
Herbert John Paterson, C.B.E.	232	8
Hugh Lett, C.B.E.	221	20
George Grey Turner	219	8
Thomas Percy Legg, C.M.G.	142	8
Philip Turner	123	19

In all, 1,150 Fellows voted (including 195 Fellows resident out of the United Kingdom), 1,142 sending their ballot papers through the post and 8 voting in person. Four voting papers were found to be invalid. There were no substitute numbers this time.

Final Fellowship: Correction.

The name of Mr. J. M. Craig (St. Andrews and Guy's) was accidentally omitted from the list of successful candidates at the Final Fellowship examination published in our issue of June 21st (p. 1116).

ROYAL COLLEGE OF PHYSICIANS OF IRELAND.

AT the monthly meeting of the College held on July 4th Sir James Craig, M.D., Fellow and ex-President of the College, was unanimously elected King's Professor of the Practice of Medicine for a further term of seven years.

The following successful candidates at the Final Examinations under the Conjoint Scheme held in June were duly admitted to the licences in medicine and midwifery of the College:

P. M. Banim, T. G. Boyle, Dorothy E. Campbell, E. J. Daly, W. O. Dunwoody, T. T. W. Eaton, V. D. Gordon, Attracta Halpenny, A. Heron, J. J. Hogan, J. A. Kennedy, G. A. Moorhead, W. M'Curry, A. S. ffrench O'Carroll, E. Orr, F. R. O'Shiel, Muriel V. Prentice, J. Shiel, R. A. M'E. B. Simpson, A. W. P. Smyth, M. J. Walsh.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

THE following have been elected examiners for the ensuing year:

Court A, for examinations under the management of the Conjoint Committee, namely, Conjoint Licence, Diploma in Public Health, and Preliminary:—Anatomy: Professor Evelyn John Evatt. Surgery: Mr. L. G. Gunn, Professor G. J. Johnston. Physiology and Histology: Professor J. A. Scott. Pathology and Bacteriology: Professor W. Boxwell. Midwifery and Gynaecology: Professor E. H. Tweedy. Biology: Professor MacD. Cosgrave. Ophthalmology: Mr. F. C. Crawley, Mr. R. D. Joyce. Chemistry and Physics: Professor W. Caldwell. Chemistry and Physics, for Diploma in Public Health only: Professor W. Caldwell, Dr. S. Young. Materia Medica, Pharmacy, and Therapeutics: Professor R. J. Rowlette. Forensic Medicine and Public Health: Professor V. M. Synge.

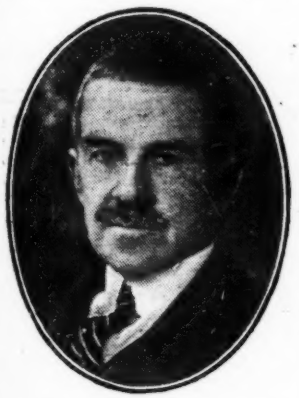
Obituary.

R. W. LOVETT, M.D.,

Professor of Orthopaedic Surgery, Harvard, U.S.A.

WE had the sorrow to record last week the death in Liverpool, immediately after landing from America, of Dr. R. W. Lovett, of Boston, Massachusetts. He had for many years been one of the outstanding personalities in orthopaedic surgery. In Boston, which boasts of many well known names in this specialty, his was by no means the least.

Robert Williamson Lovett was born at Beverley, Massachusetts, on November 18th, 1859. He graduated B.A.Harvard in 1881 and M.D. in 1885. He began to practise when he was 26 years of age, and after a short experience in New York settled in Boston, where he soon became known as a progressive and skilful surgeon. He was an original member of the American Orthopedic Association, in which he often held office and to the success of which he largely contributed. He was a member of the British Orthopaedic Association and of the Société Internationale de Chirurgie. When the American College of Surgeons was constituted he became one of its Fellows.



He was at the time of his death professor of orthopaedic surgery in Harvard University, and for many years had been surgeon to the Children's Hospital in Boston; he was also surgeon-in-chief to the Massachusetts Hospital School for Crippled and Deformed Children, and consulting orthopaedic surgeon to the New York State Board of Health. During the war he held a commission as major in the Medical Corps of the U.S. Army.

Probably Lovett's best known work was done in the study of scoliosis. His book on this subject represented the results of years of study and inquiry into the pathology and treatment of this baffling disorder. It ran through several editions and remains one of the best, if not the best work on the subject in any language.

Lovett joined with Dr. Bradford in the authorship of Bradford and Lovett's *Orthopedic Surgery*, several editions of which have appeared and have maintained the reputation of their authors. In 1923 he shared with Sir Robert Jones in writing the work on *Orthopedic Surgery* in two volumes which holds the field as the latest authority on the subject. It was reviewed in our columns on April 14th, 1923 (p. 634). The severe and widespread epidemics of anterior poliomyelitis which occurred in New England furnished Lovett with material for valuable reports on the spread, causation, and treatment of that disease, to which he devoted much laborious attention.

Dr. Lovett was a frequent visitor to Europe, and he missed scarcely any congress or international surgical meeting at which his specialty was discussed. He took part in the meeting in London of the International Society of Surgery last year, and he was on his way to this country when he was attacked by his fatal illness. He was brought ashore in Liverpool suffering from septic pericarditis, and died in the house of his old friend and fellow worker, Sir Robert Jones, on July 2nd, in his 65th year. He leaves a widow and a married daughter. His friends in this country, among whom many must have pleasant memories of the charming hospitality of his house in Boston and at Lincoln, Massachusetts, will long miss his winning personality, and will sympathize sincerely with those whom he has left behind him.

A memorial service was held at the Presbyterian Church, Liverpool, on Sunday, July 6th; it was attended by the Vice-Chancellor of the University, Dr. Adami, and by a representative gathering of medical men in the city. The Rev. J. S. Macdonald gave a brief address, in the course of which he alluded to Dr. Lovett's life work as an orthopaedic surgeon, and said that although he had died in a strange land he had been among friends, who did for him all that human skill could devise. The pulpit was draped with the American and British flags, and from it the U.S. Consul-General, the Hon. Horace Lee Washington, read the first lesson, and Sir Robert Jones the second. The choir sang J. G. Whittier's poem "When on my day of life the night is falling" and Tennyson's "Sunset and evening star." The embalmed remains are being conveyed to Boston.

We are indebted to Sir ROBERT JONES for the following tribute to his friend's memory:

The death of Professor R. W. Lovett will be deeply felt by our profession the world over. He sailed for this country with his family, intending to enjoy a much needed rest; he arrived in Liverpool desperately ill, and died in four days. No words can convey the pathos and tragedy of so overwhelming a catastrophe. He represented the highest ideals of our art, and brought to bear upon it the rich powers of a cultured mind. An indefatigable worker, a keen and critical observer, he sought and paid unswerving fidelity to truth. His thoughts were expressed in clear, incisive English—always the product of analytical study and logical acumen. He has enriched the literature of orthopaedic surgery by many classical contributions, and his work on scoliosis and infantile paralysis will have a lasting value. As professor of orthopaedic surgery at Harvard he showed his great gifts in organization and teaching, and it was always an inspiration to accompany him round his wards. His demonstrations were models of lucid and judicious statement; whether in complete agreement with him or not, one never found his point of view obscure. He was a great teacher who, by the combination of character and ability, secured the affection and respect of the student, and he was one of a small band of surgeons who formed a school of disciples. His reputation was international, and almost at any time distinguished foreign surgeons could be met at his hospitable board. Although 64 years of age, his mind was actively productive to the end and showed not the slightest trace of deterioration—even on his death-bed he wished to explain a new solution of the problem of scoliosis. It may be truly said of him that he died in harness.

How difficult it is for a close friend and intimate colleague to strike a personal note under the bewilderment of so recent a remembrance and bereavement! I cannot attempt it. He had a heart of priceless gold, only fully revealed to those he loved. His end was peaceful, surrounded by his family in a country which he liked best next his own, and all that skill and affection could suggest was done by his physicians. Our thoughts will be with his wife, who nursed him with tender devotion in the home of a friend.

CHARLES HUNTER STEWART, M.B., D.Sc.,

Professor of Public Health, Edinburgh.

PROFESSOR CHARLES HUNTER STEWART, M.B., D.Sc., F.R.S.Edin., died at his residence in Edinburgh on June 30th. He was born in Edinburgh in September, 1854. He first underwent a training in pharmaceutical chemistry and materia medica, but soon decided to pursue a career in experimental chemistry. He took the degree of B.Sc. in the University of Edinburgh in 1882 and graduated in medicine in 1884. While an undergraduate he devoted special attention to organic chemistry, and in 1880 was awarded the Hope Prize Scholarship in that subject. Upon graduation in medicine he gained the Mackay Smith Scholarship in Chemistry. Afterwards he enlarged his knowledge of experimental chemistry by working in various laboratories at Munich, Amsterdam, and Paris. On returning to Edinburgh he was appointed assistant to Professor Sir Douglas Maclagan, taking special charge of the Public Health Laboratory at the University, which had just been established in connexion with the chair of medical jurisprudence. To him were, in the main, committed the equipment and organization of this laboratory and the important work which it immediately began to carry out. For several years he was accustomed to spend his annual holiday in visiting and working in various laboratories on the Continent, and in particular he spent a period of study with

Pasteur at the Pasteur Institute in Paris. In 1894 he proceeded to the degree of D.Sc., choosing chemistry as his special subject. A great deal of work in the developing science of hygiene was carried out in his laboratory, and many papers of great importance issued from his pen. At the instance of the Corporation of Edinburgh he carried out an inquiry, in 1893, into the state of the air in the board schools and other public buildings, and in 1902 conducted an elaborate research upon the ventilation of the wards and side rooms of the Edinburgh Royal Infirmary. Numerous contributions to the transactions of the Royal Society of Edinburgh stand to his credit; for example, one upon variations of the amount of carbonic acid in ground air, and another upon the method of estimation of carbon and nitrogen in potable waters, published in 1894. He was the author of the article "Air" in the *Encyclopaedia Medica*, and made a number of communications to current medical literature, such as an article upon sterilization of milk in the BRITISH MEDICAL JOURNAL of 1896.

When the University Court instituted the Bruce and John Usher Chair of Public Health in 1898, Dr. Hunter Stewart's work as a hygienist was already well known, and, as he had been intimately connected with the chair of medical jurisprudence and public health for fourteen years, the choice of the University Court fell upon him. As a lecturer Professor Hunter Stewart possessed a clear and impressive style. His keen interest in his subject attracted many graduates to work in his laboratories, and the distinctions which these attained in later life were a great tribute to his teaching and encouragement. His keen sense of humour and his skill as a raconteur made him welcome at social gatherings, and his devotion to fresh air made walking and cycling his favourite recreations. For many years he had been a strong supporter of the Church of Scotland, and an elder in St. Cuthbert's Parish Church, Edinburgh. In 1888 Professor Hunter Stewart married the eldest daughter of the late Mr. George Gordon Gibson, civil engineer of Edinburgh, but she died in 1905; seven years later he married the youngest daughter of the late Mr. Robert Summers of Thrushville, Stirling, by whom he is survived. The interment took place in Warriston Cemetery, Edinburgh, on July 2nd, after a service at St. Cuthbert's Parish Church.

The well known Dutch gynaecologist, Dr. C. H. STRATZ, has died recently at the Hague.

The Services.

ROYAL NAVAL MEDICAL SERVICE.

THE half-yearly promotions by selection to captains to fill vacancies in the various branches of the navy were announced by the Admiralty on June 30th. There were two vacancies on the surgeon captains' list, and Surgeon Commanders Harold J. Chater and Robert W. G. Stewart, O.B.E., M.B., D.P.H., were promoted to fill these. The former has been for the last four years one of the assistants to the Medical Director-General at the Admiralty, in which position he is to be relieved on promotion by Surgeon Commander Alexander K. Smith-Shand, M.B., who has been in charge of the South Queensferry Naval Hospital for the last two years. The latter has been serving at the Chatham Naval Hospital since April, 1922, on his return from the Mediterranean station.

NAVAL MEDICAL COMPASSIONATE FUND.

AT the quarterly meeting of the directors of the Naval Medical Compassionate Fund, held on July 8th, when Surgeon Vice-Admiral Joseph Chambers, C.B., C.M.G., Medical Director-General of the Navy, was in the chair, the sum of £65 was distributed among the several applicants.

R.A.M.C. WAR MEMORIAL FUND.

THE General Committee of the Royal Army Medical Corps War Memorial Fund will meet at the War Office (Room 219), on Thursday, July 17th, at 4.45 p.m., to decide as to the final disposal of the balance of the fund.

DEATHS IN THE SERVICES.

Colonel Sydney Glenn Allen, Army Medical Staff (ret.), died suddenly at a public meeting at Folkestone on June 4th. He was born in Fort Attock, in the Punjab, where his father was then serving in the A.M.D., on March 30th, 1863, educated at Wellington College and at St. Mary's Hospital, and took the M.R.C.S. and L.R.C.P.Edin. in 1884, and the D.P.H. of the London Colleges in 1895. After filling the posts of assistant pathologist and clinical ophthalmic assistant at St. Mary's, he entered the army as surgeon on August 1st, 1885, became lieutenant-colonel after twenty years' service, and full colonel on March 1st, 1915, when some eighty lieutenant-colonels of the R.A.M.C. were promoted to colonels; he retired on June 15th, 1919. He served in the Sudan campaign of 1898, receiving the British and Egyptian medals, and in the late war as A.D.M.S. of the 27th Division in France; he was invalided home, and became President of the Travelling Medical Board in the Eastern Command; later on he was A.D.M.S. at Shorncliffe. After his retirement he settled at Folkestone, where he took an active interest in municipal affairs, and in 1921 was elected to the Town Council as one of the candidates put forward by the Ratepayers' Association. He was appointed a member of the Finance, Watch, and Health Committees of the Town Council, and later of the Education Committee. He was about to address an education meeting when his sudden death took place. In 1900 he married the eldest daughter of the late Colonel H. S. S. Watkins, C.B., R.A., and leaves a widow and two sons—the elder a lieutenant in the Royal Navy, the younger in business in London. Resolutions of regret for his sudden death, probably accelerated by his strenuous devotion to public work, were passed by the Town Council, the Guardians, the Education Authority, and the Ratepayers' Association. The Mayor and Corporation, as well as a large crowd of friends, attended the funeral service at the parish church.

Brigade Surgeon James Joseph McCarthy, R.A.M.C. (ret.), died on March 23rd. He was born at Killarney on April 27th, 1835, and after graduating as M.D. in the Queen's University, Ireland, in 1858, entered the army as assistant surgeon sixty-six years ago. He became surgeon major in 1873, and retired, with an honorary step as brigade surgeon, in 1883. He served on the staff in the China war of 1860, was present at the capture of the Taku Forts and surrender of Pekin, and in the operations against the Taeping rebels in 1862, receiving the medal and also the Legion of Honour; and in the Afghan war of 1878-79, when he was mentioned in dispatches and gained the medal. From 1866 to 1872 he served as a regimental medical officer in the 5th Foot, the Northumberland Fusiliers.

Medical News.

A SPECIAL post-graduate course will be given by the North-East London Post-Graduate College at the Prince of Wales's General Hospital, Tottenham, from July 21st to August 2nd, from 10.30 a.m. to 5.30 p.m. each day. It will include demonstrations of clinical and laboratory methods, cliniques in the wards, out-patient demonstrations, and operations. Each afternoon at 4.30 there will be a clinical lecture, free to members of the Fellowship of Medicine. Luncheon will be obtainable in the neighbourhood, and tea will be provided daily. On Saturday mornings, demonstrations will be given at the North-Eastern Fever Hospital by Dr. Frederic Thomson on the early diagnosis of the infectious fevers. The fee for the course is 3 guineas, or 2 guineas for either week. A two weeks' course in ophthalmology is being arranged at the Royal Eye Hospital, Southwark, during the latter part of July; fee £1 1s. In August, courses in special subjects have been arranged at the Brompton Hospital for Consumption and Diseases of the Chest, at the Queen's Hospital for Children, and at the West End Hospital for Nervous Diseases. Further information may be obtained from the Secretary of the Fellowship of Medicine, 1, Wimpole Street, W.1.

A NEW operating theatre at the David Lewis Northern Hospital, Liverpool, was formally opened on June 26th. The funds for the new addition presented by the sons of the late Alderman Louis S. Cohen were received from a legacy left them by their father for charitable purposes. In asking Mr. Monsarrat to accept the theatre in the name of the trustees and committee of the hospital, Mr. Harold Cohen recalled the fact that it was twenty-eight years ago since his uncle, the late Mr. Benn Levy, provided the funds for the rebuilding of the hospital. With the approval of the committee it had been decided to call the new addition the Louis Cohen theatre in memory of their father, who took such great interest in the work of the institution. Mr. Monsarrat, in accepting the gift, said that the donors had rendered a great service to Liverpool.

OWING to the illness of Dr. T. W. Naylor Barlow the annual provincial meeting of the Society of Medical Officers of Health will not be held at Wallasey on July 14th as arranged. A short business meeting to deal with matters on the agenda for the annual provincial meeting will be held at 2.30 p.m. on Friday, July 18th, at the University of Liverpool.

A COURSE of thirteen lectures and demonstrations on the treatment of osteo-articular and glandular tuberculosis and other subjects connected with practical orthopaedics will be given at the Hôpital Maritime at Berck from July 15th to 30th by M. E. Sorrel, senior surgeon to the hospital, and his colleagues. Further information can be obtained from M. Parin, Hôpital Maritime, Berck, Pas-de-Calais.

THE centenary of Charcot's birth and the twenty-fifth anniversary of the foundation of the Société de Neurologie of Paris will be celebrated in June, 1925, when the following subjects will be discussed: (1) Charcot's disease or amyotrophic lateral sclerosis, introduced by Vincenzo Neri of Bologna, who will deal with the clinical aspects, and von Bogaert of Antwerp and I. Bertand of Paris, who will discuss the pathological features. (2) Migraine, introduced by Professor Viggo Christiansen of Copenhagen (clinical aspects) and Pasteur Vallery-Radot of Paris (pathological features).

THE first of ten small hospitals, whose erection is being rendered possible through the generosity of the Italian Red Cross, was recently dedicated with much ceremony at Tokyo. The type of construction is that found most useful after the Messina earthquake some years ago, and is best adapted to resist earthquakes.

THE following medical men have been called to the Bar by the Middle Temple: Thomas Bullough Calland, M.B., Ch.B.; Isaac Llywelyn Morris, M.R.C.S.; George Brebner Scott, M.D., C.M.

THE new buildings of the National Institute for Research in Dairying (University College, Reading) at Shinfield will be opened on Saturday, July 19th.

THE British Dyestuffs Corporation, Limited, has issued a new price list of its fine chemicals for research work, and of indicators, microscopic stains, and medicinal and photographic chemicals. These products are offered in the purest condition possible, but the corporation is also prepared to supply technical qualities, at reduced prices, which can be obtained on application to it at 70, Spring Gardens, Manchester.

THE *Journal of Nervous and Mental Disease* attains its jubilee this year, and the managing editor, Dr. Smith Ely Jelliffe of New York, has prepared an index of its fifty volumes. It is an index of subjects, and if one hundred subscribers can be found the price will be fixed at 5 dollars. If it be found feasible an index of names will be prepared later. Communications may be addressed to Dr. Jelliffe at 64, West 56th Street, New York.

THE Spanish magazine *Laboratorio* is organizing an expedition of Spanish doctors to visit Wembley Exhibition during the last fortnight in July. It is hoped that visits may be paid to the hospitals and medical institutions of the United Kingdom.

THE thirty-third French Congress of Surgery will be held in Paris from October 6th to 11th under the presidency of Professor Tuffier, when the following questions will be discussed: (1) treatment of simple fractures of the upper extremity of the femur and their remote results, introduced by Dujarier of Paris and Imbert of Marseilles; (2) indications for operation in uterine fibroids, introduced by Labey of Paris and Tixier of Lyons; (3) pre- and post-operative treatment and choice of the anaesthetic in gastro-intestinal surgery, introduced by Landret of Lille and Lardennois of Paris. Surgeons wishing to take part in the congress should send a request signed by two members of the association to the general secretary, 10, rue de Seine, Paris, before August 1st.

A CONFERENCE of modern churchmen will be held at Somerville College and St. Hugh's College, Oxford, from August 25th till September 1st, when the subject of the scientific approach to religion will be discussed. Full particulars can be obtained from the honorary secretary, Miss Dora Nussey, Westfield, Ilkley.

ON the occasion of his recent visit to Berlin Professor Recasens, the well known gynaecologist and dean of the Madrid medical faculty, was elected an honorary member of the Berlin Medical Society.

A SECTION has been added to the United States Education Law providing that a specialist shall assist the State medical inspector when he makes eye and ear tests on public school pupils.

THE island of Tai Kam, off the shore of Canton, is about to be converted into a leper colony for 2,000 lepers by the Chinese Government. The American Mission to Lepers has undertaken the construction of the first sixteen buildings of the leprosarium at a cost of 66,000 dollars.

FOUR prizes, ranging from 500 to 2,500 lire, are offered by the Italian Felix Mantovani Foundation for the four best monographs published in 1924 on the physiology and pathology of infant feeding. Three copies of their monographs should be sent by the candidates to the Italian Pediatric Society, Hospital A. Meyer, 115, via Mennelli, Florence, before December 31st, 1924.

ON the occasion of Professor Adolf Lorenz's seventieth birthday the *Wiener Medizinische Wochenschrift* dedicated its issue of June 7th to orthopaedic surgery.

Letters, Notes, and Answers.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—not necessarily for publication.

ALL communications with reference to advertisements as well as orders for copies of the JOURNAL should be addressed to the Financial Secretary and Business Manager, 429, Strand, London, W.C. Attention to this request will avoid delay. Communications with reference to editorial business should be addressed to the Editor, BRITISH MEDICAL JOURNAL, 429, Strand, W.C.2.

THE telephone number of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is Gerrard 2630 (Internal Exchange). The telegraphic addresses are:

EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology Westrand, London.*

FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westrand, London.*

MEDICAL SECRETARY, *Mediocra Westrand, London.*

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone 4737, Dublin), and of the Scottish Office, 6 Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh*; telephone, 4361, Central).

QUERIES AND ANSWERS.

"Y. M. J. H."—Diphtheria is not a water-borne disease. It is not, therefore, likely to be caused by drinking water the spring or source of which arises in a bog.

VASOMOTOR RHINITIS.

DR. P. J. MCNICHOLAS (Liverpool) asks for advice in the treatment of two cases of vasomotor rhinitis; in both the condition persists winter and summer. Each patient is seized, immediately after getting up, with nasal irritation, followed by violent and prolonged sneezing, and a free flow of watery mucus from the nostrils. The attack lasts about half an hour. Our correspondent supposes that in both cases the nasal mucous membrane is hypersensitive to certain substances, and that the condition is similar to bronchial asthma. He has prescribed a lotion containing potassium chlorate and bicarbonate, sodium biborate, and carbolic acid, and a mixture containing calcium chloride (gr. 15). This treatment has seemed to prolong the intervals, but the attacks continue.

DIAGNOSIS OF SORE THROAT.

"A. G. N." writes in reply to "Perplexed" (June 14th, p. 1078) to point out that where several "discrete spots"—that is, exudation of pus from the follicles—are present the case is one of follicular tonsillitis. The temperature will usually be from 100° to 103°, and there will be a febrile (full bounding) pulse. Such a case cannot be mistaken for diphtheria. The line of treatment, "A. G. N." considers, should be an antiseptic gargle and a mixture containing sodium salicylate. Such cases do not call for antidiphtherial serum, though its administration may benefit. When in place of spots there is a massed accumulation of purulent-looking matter at two or more places on the tonsils, patches produced may be due to the running together of pus from adjacent follicles or to early diphtherial infection. In the latter alternative the temperature is lower (about 100°), but the pulse rate is out of proportion, and the pulse is not full and bounding. If the practitioner inclines to a diagnosis of diphtheria he is not, "A. G. N." holds, justified in withholding antidiphtherial serum, because if the condition is not diphtheria the injection will do no harm, while if it is early injection will render unnecessary large doses later on. By taking a smear and staining it the diagnosis can be confirmed in a few minutes. If the practitioner, instead of doing this himself, sends a specimen to the laboratory he should not hesitate to use the serum in the meantime. If the patient is sent to hospital the practitioner should write a note stating the quantity of serum already used. "A. G. N." adds that no protein food should be given during ten or fourteen days as frequently a rash comes out, and he has seen some very severe reactions. In his opinion no question of negligence can arise from the use of serum, but in some cases failure to use it might be considered negligence. Cases of severe septic throats with gangrenous edges may give rise to difficulty in diagnosis. It is to be remembered that a positive result from the examination of the swab is not always to be taken as evidence of diphtheria, since a carrier may have tonsillitis.

INCOME TAX.

"J. G. S." has been refused more than two-thirds of his motor expenses, including cost of renewal of car, on the ground apparently that he makes substantial use of the car for private purposes.

*** It would seem that in this connexion, as also in connexion with the purchase of petrol, our correspondent is suffering from lack of definite information with regard to the private use of the car; until he is in a position to supply definite data he will find it difficult to displace that assumption. We suggest, therefore, that he might endeavour to get out mileage figures for the past year or so; failing that he should keep careful mileage records (professional and private) in future.

LETTERS, NOTES, ETC.

ACUTE PUERPERAL INVERSION OF THE UTERUS.

WE have received the following further notes upon this subject:—

Dr. W. M. STEPHENSON, *M.C.* (Marshfield, Chippenham), writes: With regard to Dr. Jordan's apparent fear (June 28th, p. 1156) that reinverting the uterus may have hastened the collapse of his patient, the following may be of interest. I was called to a midwife's case in Coventry in June, 1914, and found her patient unconscious, with acute, complete inversion of the uterus, the placenta being adherent over three-fourths of its area. Less than two ounces of blood had been lost. The patient died while I was dissolving a strychnine tablet for hypodermic injection—less than half an hour, according to the midwife, after the accident occurred. No attempt to reinvert the uterus was made. I differ from Dr. Jordan in thinking that these cases contrast with war experience. Soon after landing in France I saw an officer fall within a few yards of me. He died, certainly within five minutes. The entrance wound, made by a bullet, was about two inches below the umbilicus and the exit wound was in the left buttock. Assuming an important artery had been opened I enlarged the anterior wound to investigate, and found no blood in the abdomen at all. Without reciting other cases, further experience proved to me that penetrating wounds in the lower abdomen, even when loss of blood is a negligible factor, usually cause profound shock, and are often very rapidly fatal. This is not, in my experience, the case with wounds in the upper abdomen. Does the peritoneum in the two areas differ in sensitiveness or in nerve supply?

Dr. ADAM MOSS (West Kirby) writes: When in Ladysmith, about 1900, I was summoned to the country, a distance of ten miles, to see a woman who had complete inversion of the uterus after childbirth. I was surprised at the ease with which it was reduced. The patient made an uninterrupted recovery.

Dr. V. S. HODSON (Khartoum and Omdurman Civil General Hospitals) writes from London as follows: The following instance of native methods in midwifery may be of interest, and is sent as a contrast to the note in the BRITISH MEDICAL JOURNAL, May 31st (p. 955). A young native primipara was delivered normally when, after expression of the placenta, with the help, no doubt, of a pull on the cord, complete prolapse of the inverted uterus occurred. The midwife took a razor and removed as much of the protruding mass as was possible with one sweep of the weapon, and as much more as she could manage with a second cut. The patient died without undue delay.

Dr. H. C. WILSON (Ramsgate) writes: I was called by a midwife to a case she was attending; the child was born, but it was owing to trouble with the placenta that she sent for help. I found the patient, a primipara, to have the uterus completely inverted, outside the vulva, with placenta at fundus, adherent; there was considerable haemorrhage. She was suffering from shock and in a somewhat collapsed state. I peeled off the placenta with some difficulty, owing to its adherence; some shreds remaining I scraped away with a sterilized tablespoon. I was able to replace the uterus without difficulty as soon as this was done; the patient rallied considerably. The puerperium was practically normal. I attended her subsequently on the occasion of her next confinement; the birth of the child was comparatively easy, but the placenta was firmly adherent and had to be removed manually.

VOICE PRODUCTION.

Dr. FITZJAMES MOLONY (Porlock, Somerset) writes: The *Morning Post* lately published an appeal from the Archbishops of Canterbury and York for funds to teach voice production and singing to clergymen and divinity students. It is a consummation devoutly to be wished, but it is to be hoped that the teaching will be entrusted to men who really know how to train the voice. Those of us who heard Sims Reeves and Patti when well past their prime can remember that there was no tremolo or shakiness in their voices. Nowadays many of the comparatively young voices that we hear at concerts or by wireless have so much tremolo as to be almost painful to listen to. In almost every case this is due to training the voice to sing notes above or below its natural compass, and in all cases beyond its natural strength. If we take middle C as representing 512 vibrations in the second, a voice with a tremolo will range between 500 and 520 vibrations in the second. Consequently such voices can never be quite true. The damage to the throat by faulty teaching has probably something to do with the deafness that seems more frequent with singers than with other people. The number of fine voices that are ruined is appalling, and this destruction of the singing voice should be stopped. The Section of Laryngology and Otology of the British Medical Association might do worse than discuss voice production in all its bearings at the Annual Meeting.

THE CAUSATION OF CANCER.

Dr. SIDNEY DAVIES (Buckhurst Hill) writes: It will be of surpassing interest if Drs. Arthur and Sydney Smith (June 21st, p. 1114) prove to have discovered the specific organism of carcinoma. But, however valuable such discovery may be, it hardly seems likely to help very much in the prevention of this disease—by itself. Isolation of the tubercle bacillus has undoubtedly assisted in the cure of consumption; but how much has it done for its prevention? I venture to say that in this respect preventive medicine owes far more to Cobden and Peel than to Koch. Cheap food, better housing, shorter hours in healthier workshops, the open-air cult, etc., have done more—much more —in the war against tubercle than has knowledge of its specific cause. It is more than probable that the same will be the case with cancer. Its parasite or microbe—if such exists—must be widespread and not easily avoided. Like the tubercle bacillus, it is probably innocuous, except under the influence of certain (?) secondary causes. These have been proved to be very frequently some kind of irritation. The external irritants of the skin are easily determined. It remains to discover what are the exciting causes which determine cancer of the breast, uterus, and digestive organs. There is some reason to think it may be a product of our excessive and unnatural diet. Inquiry on these lines will, I think, prove more profitable than search for a specific cause, however successful the latter may be.

COMPLICATIONS OF ACUTE MASTOIDITIS.

Dr. ALEX. W. STIRLING (Atlanta) writes: In the JOURNAL of May 24th (p. 909) Dr. Drybrough-Smith relates some details of a case of paralysis of nerves related to acute mastoiditis. This seems to have been an instance of "Gradenigo's triad," of which about a hundred cases have been recorded; it is due to some form of lesion, generally an inflammation of the dura, or of the petrous portion of the bone. Recovery seems to take place in about 70 per cent. of cases.

PERIOSTITIS OF FEMUR SIMULATING SCIATICA.

Dr. D. MINTZMAN (London, N.) writes: I was called in to see a man, aged 52, who had been confined to bed for six weeks on account of severe pain in the left thigh and leg. He was treated for sciatica and had consulted a physician and two surgeons. All agreed to the diagnosis of sciatica. The history was that he woke up one night with a sharp pain in his thigh shooting down his leg along the course of the great sciatic nerve. Temperature was normal all the time, pulse varied from 75 to 90. When I saw him the posterior aspect of his thigh and leg were blistered by tr. iodi fortis. I noticed marked wasting of the glutei muscles. Reflexes and sensations were normal. There were some limitations of hip movements. I found tenderness over the region of the great trochanter of the femur and some fluctuation. I called in Mr. A. S. Blundell Bankart and we diagnosed periostitis of upper end of the femur with abscess formation. *X*-ray examination confirmed the diagnosis. The Wassermann test was negative. Mr. Bankart operated the following day and withdrew a quantity of pus. The patient made an uninterrupted recovery. Staphylococcal periostitis is very rare at this age, and one can only explain the case as one of latent infection. The patient had had periostitis of the other leg in childhood.

CONTROL OF INEBRIATES.

Dr. F. S. D. HOGG, medical superintendent of Dalrymple House, Rickmansworth, in his last annual report makes the following reference to the need for powers of control over inebriates and other narcomaniacs:

"I have continued to receive many appeals from various persons for advice as to the possibility of placing drug and drink victims in whom they are interested under control, and have had to explain that, apart from employing financial or domestic pressure, they can do nothing but try persuasion. I have, from time to time, drawn attention in my reports to the urgent need of an amendment to the Inebriates Act to allow non-criminal inebriates to be compulsorily placed under supervision and treatment. These persons may be in a chronic condition of alcoholic or drug poisoning, or periodically unfit for decent society, but so long as they commit no offences against the laws and cannot be certified as insane they are free to continue to degrade and ruin, not only themselves, but their families and dependants. Some, of course, are at times in a certifiable condition, but relatives and friends usually hesitate to place the stigma of insanity upon one whose sanity will return in a few hours or days, and especially when the detention can be only for a period too short to be of any permanent benefit. Too frequently it is only when such persons have exhausted their resources, have hopelessly lost their positions, and have ruined their constitutions, that they consent, usually at someone else's expense, and often still unwillingly, to place themselves under treatment. Had it been possible to have placed them earlier under control they would have stood a good chance of keeping position and fortune and of being useful members of the community."

TONGUE-TIE.

Dr. CHARLES J. HILL AITKEN (Kilnhurst, near Rotherham) writes: I used to wonder why mothers were so keen on having their infants' tongues cut, the more so as I had read in a medical work that the tongue took no part in suckling. I persuaded one mother not to have her baby's tongue cut, showing her at the time she consulted me the printed statement in the book. Later she asked me to watch her baby suck. The tongue was protruded from the mouth and embraced the nipple. She told me she had seen kittens' tongues round the nipple when they were sucking. Possibly the tongue has nothing to do with sucking, but mothers see the protruding tongue in some cases and presume protrusion is necessary.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 35, 38, 39, 40, and 41 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 36 and 37.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page *16*.